# Community Health Needs Assessment

*Prepared for*
Inova Fairfax Medical Campus

*By*
Verité Healthcare Consulting, LLC

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## ABOUT VERITÉ HEALTHCARE CONSULTING

Verité Healthcare Consulting, LLC (Verité) was founded in May 2006 and is located in Alexandria, Virginia. The firm serves clients throughout the United States as a resource that helps health care providers conduct Community Health Needs Assessments and develop Implementation Strategies to address significant health needs. Verité has conducted more than 50 needs assessments for hospitals, health systems, and community partnerships nationally since 2010.

The firm also helps hospitals, hospital associations, and policy makers with community benefit reporting, program infrastructure, compliance, and community benefit-related policy and guidelines development. Verité is a recognized, national thought leader in community benefit and in the evolving expectations that tax-exempt healthcare organizations are required to meet.

# EXECUTIVE SUMMARY

## Introduction

This Community Health Needs Assessment (CHNA) was conducted by Inova Fairfax Medical Campus (IFMC or "the hospital") to identify significant community health needs and to inform development of an Implementation Strategy to address those needs. The hospital's assessment of community health needs also responds to regulatory requirements.

Inova Fairfax Medical Campus, the largest hospital facility within Inova Health System (Inova), is an 833-bed community hospital that serves Fairfax County, Virginia and parts of Loudoun County, Prince William County, and the Cities of Falls Church and Manassas. The hospital provides an array of medical and surgical services, including Northern Virginia's only level 1 trauma center, Inova Women's Hospital, Inova Children's Hospital, the Inova Heart and Vascular Institute, and others. Additional information on the hospital and its services is available at: http://www.inova.org/IFMC/.

The hospital is an operating unit of Inova Health System, which includes four other hospitals (Inova Alexandria Hospital, Inova Fair Oaks Hospital, Inova Loudoun Hospital, and Inova Mount Vernon Hospital) and that operates a number of other facilities and services across Northern Virginia. Additional information about Inova is available at: http://www.inova.org/.

Federal regulations require that tax-exempt hospital facilities conduct a CHNA every three years and adopt an Implementation Strategy that addresses significant community health needs. Tax-exempt hospitals also are required to report information about the CHNA process and about community benefits they provide on IRS Form 990, Schedule H.

As described in the instructions to Schedule H, community benefits are programs or activities that provide treatment and/or promote health and healing as a response to identified community needs. Community benefit activities and programs also seek to achieve objectives, including:

- improving access to health services,
- enhancing public health,
- advancing increased general knowledge, and
- relief of a government burden to improve health.[1]

To be reported, community need for the activity or program must be established. Need can be established by conducting a Community Health Needs Assessment.

CHNAs seek to identify significant health needs for particular geographic areas and populations by focusing on the following questions:

- ***Who*** in the community is most vulnerable in terms of health status or access to care?

[1]Instructions for IRS form 990 Schedule H, 2015.

- ***What*** are the unique health status and/or access needs for these populations?
- ***Where*** do these people live in the community?
- ***Why*** are these problems present?

The question of ***how*** the hospital can best address significant needs is the subject of a separate Implementation Strategy.

## Methodology Summary

An Advisory Committee was established to help guide the hospital's CHNA process. This committee included the Health Directors from the City of Alexandria and from Fairfax, Loudoun, and Arlington Counties. Executive Directors from three Federally Qualified Health Centers (FQHCs) also provided input (Neighborhood Health, HealthWorks for Northern Virginia (HealthWorks), and Greater Prince William Community Health Center). Committee members also included representatives from Inova hospitals and the Inova Health System. Input was received from the committee regarding how the hospital's community was defined; data sources; interview candidates and protocols; the design and administration of a community survey, and interpretation of its results; and the process by which community health needs were determined to be significant.

Federal regulations that govern the CHNA process allow hospital facilities to define the "community a hospital serves" based on "all of the relevant facts and circumstances," including the "geographic location" served by the hospital facility, "target populations served" (e.g., children, women, or the aged), and/or the hospital facility's principal functions (e.g., focus on a particular specialty area or targeted disease)."[2] The community assessed by Inova Fairfax Medical Campus accounts for over 77 percent of the hospital's 2014 inpatient discharges and emergency department visits.

Secondary data from multiple sources were gathered and assessed. Statistics for numerous health status, health care access, and related indicators were analyzed, including comparisons to benchmarks where possible. Findings from recent assessments of the community's health needs conducted by other organizations were reviewed as well.

Input from 62 individuals was received through key informant interviews. These informants represented the broad interests of the community and included individuals with special knowledge of or expertise in public health.

A community survey was administered between November 1, 2015 and January 31, 2016. The survey was translated into eight languages. A total of 2,232 surveys from across Northern Virginia were received and assessed. Among those, 1,541 surveys were received from individuals living in the Inova Fairfax Medical Campus community.

Community health needs were determined to be "significant" if they were identified as problematic in at least three of the four following data sources: (1) the most recently available

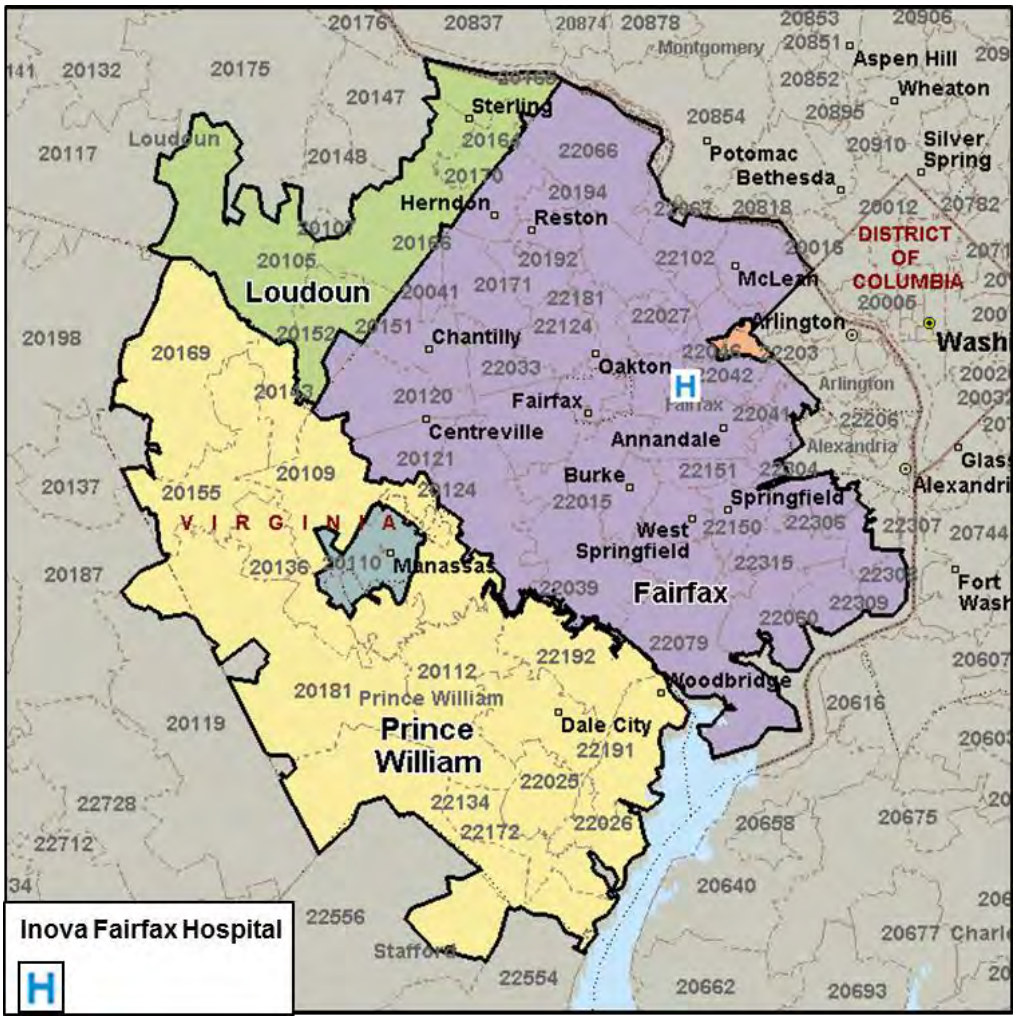
[2] 501(r) Final Rule, 2014.

secondary data regarding the community's health, (2) recent assessments developed by other organizations (e.g., local Health Departments), (3) community input provided by the key informants who participated in the interview process, or (4) the community survey.

It is important to note that the survey utilized a convenience sampling methodology, and not a random sampling approach, such as one carried out by dialing randomly selected phone numbers. For this reason, findings from the survey are not generalizable to or representative of community-wide opinion. Even with this consideration, results from the community survey have been included in this assessment because they may corroborate and supplement the other data sources, and may be helpful in identifying potential health disparities.

## Community Served by the Hospital

The following map portrays the community served by Inova Fairfax Medical Campus.




### Summary Characteristics

- Community comprised of Fairfax County and the City of Fairfax, as well as parts of Loudoun County, Prince William County, the City of Manassas, and the City of Falls Church (64 ZIP codes total)
- 77% of 2014 discharges originated in the community
  - 62% from Fairfax County
  - 11% from Prince William County
- Total population in 2014: 1,740,883
- Projected population change between 2015 and 2020: 6.0%
  - 31.7% for the 65+ population
- Comparatively favorable health status and socioeconomics, but pockets of poverty and specific community health problems found to be present
- Eleven significant community health needs were identified through the CHNA

## Significant Community Health Needs

Based on an assessment of secondary data (a broad range of health status and access to care indicators) and of primary data received through key stakeholder interviews and the community survey, the following eleven issues have been identified as significant health needs in the community served by Inova Fairfax Medical Campus. The issues are presented below in alphabetical order, along with certain highlights regarding why each issue was identified as "significant."

**Access to Basic Medical Care**

- Primary care physician rates are below Virginia averages for both Loudoun and Prince William counties (**Exhibit 20**).
- Federally-designated Medically Underserved Populations are present in the community served by Inova Fairfax Medical Campus (**Exhibit 34**).
- Per-capita preventable admissions are particularly high in Prince William County (**Exhibit 29**). This may be due to issues with the accessibility and utilization of primary care, preventive care, and health education.
- Other recent health assessments identified access to basic medical care as a significant need, including the Fairfax County Community Health Improvement Plan (CHIP), Virginia Hospital Center's CHNA, the Prince William Coalition for Human Services' CHNA, and the Virginia Health Equity Report. Challenges with accessing and understanding insurance benefits are cited in these reports as contributing to access problems.
- Access to basic medical care was identified by a vast number of interviewees as problematic. Interviewees indicated that some individuals still rely excessively on emergency departments for primary care.
- Access to care is a Healthy People 2020 goal, as it "is important for the achievement of health equity and for increasing the quality of a healthy life for everyone."
- Interviewees identified lack of transportation options, lack of health insurance coverage or understanding of coverage, and service affordability as significant barriers to primary care.
- The rate of uninsured residents in Fairfax County and Prince William County is near or above the Commonwealth's average (**Exhibit 17**).
- To date, Virginia has been one of the states that has not expanded Medicaid, as originally contemplated by the Patient Protection and Affordable Care Act (ACA, 2010). The uninsurance rate would decline if Virginia reversed this policy decision.
- Virginia-wide BRFSS data indicate that Hispanics have the highest uninsurance rate and are least able to see a doctor due to cost. Financial barriers to accessing care are greatest for lower-income individuals.

**Access to Dental Care**

- County Health Rankings shows that the per-capita supply of dentists in both Loudoun and Prince William is below Virginia averages (**Exhibit 20**).

- Interviewees consistently stated that access to dental care is problematic for many in the community – particularly for those without insurance or who have coverage that dentists are unwilling to accept
- Other, recent community health assessments identified access to dental care as a significant need in the community, including the Virginia Hospital Center CHNA, Sentara CHNA, and Prince William Medical Center CHNA.
- Access to dental care was identified by survey respondents in the Inova Fairfax Medical Campus community as the second most difficult service to access behind primary care (**Exhibit 40**).

**Conditions and Care of the Elderly**

- The population in Inova Fairfax Medical Campus's community is projected to increase 6 percent between 2015 and 2020; the number of persons 65 years of age and older in the community is projected to increase by 31.7 percent over this period (**Exhibit 5**). Meeting the health and social services needs of the aging population is a significant issue.
- CHNA reports prepared by Sentara and Virginia Hospital Center identified care of the elderly as a significant community health need.
- Interviewees also identified care of the elderly as a challenge in the community. The need for additional in-home health care and day care services frequently was mentioned. Concern was also raised about the number of seniors who live alone and suffer from poor mental health/depression.
- The health of older adults is a topic area focus in Healthy People 2020 goals. Objectives related to this goal include increased use of preventive services, increased providers with geriatric specialties and aging well in place.

**Cultural Competency in Care**

- The Inova Fairfax Medical Campus community is becoming increasingly diverse. U.S. Census data indicate that growth rates for Hispanic (or Latino) and Asian populations have been higher than those for Blacks/African Americans and Whites/Caucasians.
- In three Fairfax Hospital community ZIP codes over 44 percent of the population is foreign-born (**Exhibit 10**). In six ZIP codes over 23 percent of the population has limited English proficiency (**Exhibit 11**).
- Poverty rates for Black and Hispanic (or Latino) populations in the community (and across Virginia) are comparatively high (**Exhibit 14**).
- The incidence of tuberculosis is comparatively high in the community, possibly resulting from high levels of immigration (**Exhibit 25**).
- Other recent health assessments in the community identified cultural competency in care as a significant need, including the Virginia Health Equity Report, the Fairfax County CHIP, the Prince William Medical Center CHNA, and The State of the Health Care Workforce in Northern Virginia.
- A number of interviewees stated that immigrants, undocumented workers, minority populations, and those with language barriers experience particular challenges in accessing care.

**Diabetes**

- In County Health Rankings, Fairfax, Loudoun, and Prince William Counties all have lower rates for diabetic screening than the Virginia average (**Exhibit 20**).
- Community Health Status Indicators (CHSI) data indicate that adult diabetes morbidity benchmarks unfavorably in Prince William County compared to peer counties (**Exhibit 21**).
- Other, recent health assessments in the community identified diabetes as significant concern, including the Virginia Hospital CHNA, the Prince William Medical Center CHNA, The Prince William Coalition for Human Services CHNA, and the Sentara Northern Virginia CHNA.
- Several interviewees identified both diabetes and pre-diabetes as conditions of particular concern in the Inova Fairfax Medical Campus community.

**Hypertension**

- Other health assessments in the community identified hypertension as a significant community health need, including the Virginia Hospital Center CHNA, Sentara Northern Virginia CHNA, and Virginia Health Equity Report.
- Interviewees identified hypertension as a significant community health need, resulting from an unhealthy and sedentary lifestyle.
- Nearly 10 percent of community survey respondents identified hypertension as a top community health concern (**Exhibit 38**). Additionally, 40 percent of respondents indicated that they had been diagnosed with hypertension in the past (**Exhibit 39**).

**Lack of Affordable Housing**

- Community Health Status Indicators (CHSI) data indicate that high housing costs benchmark unfavorably in both Loudoun County and Prince William County compared to peer counties (**Exhibit 21**).
- Other recent assessments in the area identified a lack of affordable housing as a significant concern in the community, including the Prince William Coalition for Human Services CHNA.
- Additionally, 20.3 percent of community survey respondents identified a lack of "housing that is adequate, safe and affordable" as a top community health concern (**Exhibit 38**).

**Mental Health Conditions and Access to Mental Health Care**

- Youth Risk Behavior Surveillance System (YRBSS) data for Fairfax County indicate above average rates of "sad or hopeless feelings" among youth (**Exhibit 27**).
- Virtually all other recent assessments of the community's health have identified mental health conditions and/or access to mental health services as a significant concern.
- Interviewees identified poor mental health status and access to mental health services as significant issues in the community for all age groups.
- Over 25 percent of respondents from the area served by Inova Fairfax Medical Campus indicated that mental health was among the top three health concerns in the community – the second highest issue following "access to care" (**Exhibit 38**). Twenty-six (26) percent of respondents indicated they had been told at least once by a healthcare provider that they have a depressive disorder or other mental health concern (**Exhibit 39**).

**Obesity and Obesity-Related Concerns**

- Fairfax YRBSS data indicate that under 40 percent of youth are physically active (on five or more days in the past week – a proportion below Virginia and U.S. averages (**Exhibit 27**).
- Other recent community health assessments have identified childhood and adult obesity as significant needs, including the Fairfax County CHIP, Sentara CHNA, Prince William Medical Center CHNA, and Virginia Hospital Center CHNA.
- Across all interviews, the health behaviors of greatest concern were poor diet and nutrition and limited physical activity. Especially for individuals in lower socio-economic classes, there is limited access to healthy foods and insufficient knowledge about nutrition. Additionally a lack of walkability, including a lack of sidewalks and trails, throughout the community was cited as a contributing factor to unhealthy, sedentary lifestyles, particularly in the Richmond Highway corridor. Diabetes, heart disease, and hypertension frequently were cited by many as associated concerns.
- More than 24 percent of community survey respondents ranked obesity as one of the top three community health concerns in the Inova Fairfax Medical Campus community (**Exhibit 38**). Nearly 46 percent of respondents indicated that a medical professional had told them they were obese or overweight at some point in time (**Exhibit 39**).
- Almost 15 percent of community survey respondents identified a lack of exercise as one of the top three community health concerns (**Exhibit 38**).
- The Healthy People 2020 goal related to nutrition and weight status is to "promote health and reduce chronic disease risk through the consumption of healthful diets and achievement and maintenance of healthy body weights."

**Physical Environment**

- Fairfax, Loudoun, and Prince William Counties each exceeded Virginia averages in air pollution and the percent of drivers that commute to work alone and drive over thirty minutes (**Exhibit 20**).
- Interviewees also identified a lack of adequate sidewalks and walking areas as another physical environment concern that impedes good health.
- Other health assessments also identified transportation and environment concerns as priorities, including the Prince William Coalition for Human Services CHNA and the Fairfax County CHIP.

**Substance Abuse Including Excessive Alcohol Use**

- In County Health Rankings, Fairfax, Loudoun, and Prince William rank in the bottom half of Virginia cities and counties for "excessive drinking" (**Exhibit 19**).
- In Community Health Status Indicators (CHSI), Fairfax County is also ranked within the bottom quartile of peer counties for "adult binge drinking" (**Exhibit 21**).
- Binge drinking rates may be highest for those aged 18 to 24 years and most prevalent within White populations (**Virginia BRFSS**).
- Several other, recent health assessments identified substance abuse and excessive alcohol use as significant needs, including the Fairfax CHIP, the Northern Virginia Health Foundation report, and the Prince William Medical Center CHNA.

- Interviewees cited alcohol abuse and binge drinking as the most prevalent substance abuse issue. Concerns about opioid use were also present. Interviewees were particularly concerned about adolescent substance abuse in the community.
- Over 13 percent of community survey respondents indicated that alcohol and substance abuse was a top community health concern (**Exhibit 38**).

# CHNA DATA AND ANALYSIS

# METHODOLOGY

This section provides information on how the CHNA was conducted.

## Data Sources

Community health needs were identified by collecting and analyzing data from multiple sources. Considering a vast array of information is important when assessing community health needs, to ensure the assessment captures a wide range of facts and perspectives and to increase confidence that significant community health needs have been identified accurately and objectively.

Statistics for numerous community health indicators were analyzed, including data provided by local, state, and federal government agencies, local community service organizations, and Inova Health System. Comparisons to benchmarks were made where possible. Fortunately, recent data regarding health needs for youth in Fairfax County were available for review from surveys administered in public schools, much like YRBSS (the Youth Risk Behaviors Surveillance System, a survey administered nationally by the CDC). This CHNA also incorporated findings from other recently conducted, relevant community health assessments.

Input from 62 persons representing the broad interests of the community was taken into account through key informant interviews. Interviewees included: individuals with special knowledge of or expertise in public health; local public health departments; agencies with current data or information about the health and social needs of the community; representatives of social service organizations; and leaders, representatives, and members of medically underserved, low-income, and minority populations.

A community survey was administered between November 1, 2015 and January 31, 2016. In total, 2,232 surveys were received from communities served by all Inova hospitals, and 1,541 surveys were received from residents of the Inova Fairfax Medical Campus community. The survey was available online (in eight languages: English, Amharic, Arabic, Farsi, Korean, Spanish, Vietnamese, and Urdu) and also in paper-based formats. The survey consisted of 22 questions about a range of health status and access issues and regarding respondent demographic characteristics (see Appendix A).

Paper copies of the survey were distributed to various local organizations. Efforts were made to reach vulnerable populations such as racial and ethnic minorities, low-income groups, and non-English speakers. The survey was publicized via social media and interactions with human services organizations, Health Departments, and other methods.

It is important to note that the survey utilized a convenience sampling methodology, and not a random sampling approach, such as one carried out by dialing randomly selected phone numbers. For this reason, findings from the survey are not generalizable to or representative of community-wide opinion. Even with this consideration, results from the community survey have been included in this assessment because they may corroborate and supplement the other data sources, and may be helpful in identifying potential health disparities.

Surveys submitted or entered between mid-November 18, 2015 and February 2, 2016 are included in this assessment.

## Collaboration

The hospital collaborated with an Advisory Committee, which was established to help guide the CHNA process. This committee included the Health Directors from the City of Alexandria and from Fairfax, Loudoun, and Arlington Counties. Executive Directors from three Federally Qualified Health Centers (FQHCs) also provided input (Neighborhood Health, HealthWorks for Northern Virginia (HealthWorks), and Greater Prince William Community Health Center). Committee members also included representatives from Inova hospitals and the Inova Health System. Input was received from the committee regarding how the hospital's community was defined; data sources; interview candidates and protocols; the design and administration of a community survey and interpretation of its results; and the process by which community health needs were determined to be significant.

## Prioritization Process

Community health needs were determined to be "significant" if they were identified as problematic in at least three of the four following data sources: (1) the most recently available secondary data regarding the community's health, (2) recent assessments developed by other organizations (e.g., local Health Departments), (3) community input provided by the key informants who participated in the interview process, or (4) the community survey.

## Information Gaps

This CHNA relies on multiple data sources and community input gathered between August 2015 and February 2016. A number of data limitations should be recognized when interpreting results. For example, some data (e.g., County Health Rankings, Community Health Status Indicators, Behavioral Risk Factors Surveillance System, and others) exist only at a county-wide level of detail. These data sources do not allow for assessing health needs at a more granular level of detail, such as by ZIP code or census tract. The hospital's community includes subsets of Loudoun and Prince William County ZIP codes, so relying on county-wide data for those areas is imprecise.

Secondary data upon which this assessment relies measure community health in prior years. For example, the most recently available mortality data published by the Virginia Department of Health are from 2013. Others sources incorporate data from 2010. The impacts of recent public policy developments, changes in the economy, and other community developments are not yet reflected in those data sets.

In addition, data availability varies across cities and counties in Northern Virginia. For example, both Fairfax County and the City of Alexandria recently conducted youth risk behavior surveys in public schools. These "YRBSS" (Youth Risk Behaviors Surveillance System) data are helpful in identifying health issues for youth, such as concerns regarding mental health, smoking, sexual

behaviors, substance abuse, and others. A similar survey has not yet been conducted in Loudoun or Prince William counties.

The community survey developed and administered for this CHNA was not administered to a random sample of community residents. Accordingly, its results are not generalizable to or representative of community-wide opinion.

The findings of this CHNA may differ from those of others conducted in the community. Differences in data sources, communities assessed (e.g., hospital service areas versus counties or cities), and prioritization processes contribute to differences in findings.

# DEFINITION OF COMMUNITY ASSESSED

This section identifies the community that was assessed by Inova Fairfax Medical Campus. The community was defined by considering the geographic origins of the hospital's 2014 inpatient discharges and emergency department visits.

Inova Fairfax Medical Campus's community is comprised of 64 ZIP codes, including all of Fairfax County and the City of Fairfax, along with parts of Loudoun County, Prince William County, Falls Church City, and Manassas City (**Exhibit 1**).

**Exhibit 1: Inova Fairfax Medical Campus Inpatient Discharges and Emergency Department Visits by City or County, 2014**

| City or County | Percent of Discharges | Percent of Emergency Department Visits |
|---|---|---|
| Fairfax County, VA | 61.8% | 73.3% |
| Falls Church City, VA | 0.8% | 1.2% |
| Loudoun County, VA | 2.8% | 1.7% |
| Manassas City, VA | 1.0% | 0.7% |
| Prince William County, VA | 10.8% | 6.8% |
| **Combined Community Total** | **77.1%** | **83.6%** |
| **Other Area** | 22.9% | 16.4% |
| **All Areas** | 100.0% | 100.0% |
| | | |
| **Note: Total Discharges and ED Visits** | 43,201 | 133,734 |

Source: Inova Health System, 2015.

In 2014, the 64 ZIP codes that comprise the hospital's community accounted for over 77 percent of its discharges and over 83 percent of its emergency department visits.

The total population of this community in 2014 was approximately 1,741,000 (**Exhibit 2**).

## Exhibit 2: Community Population, 2014

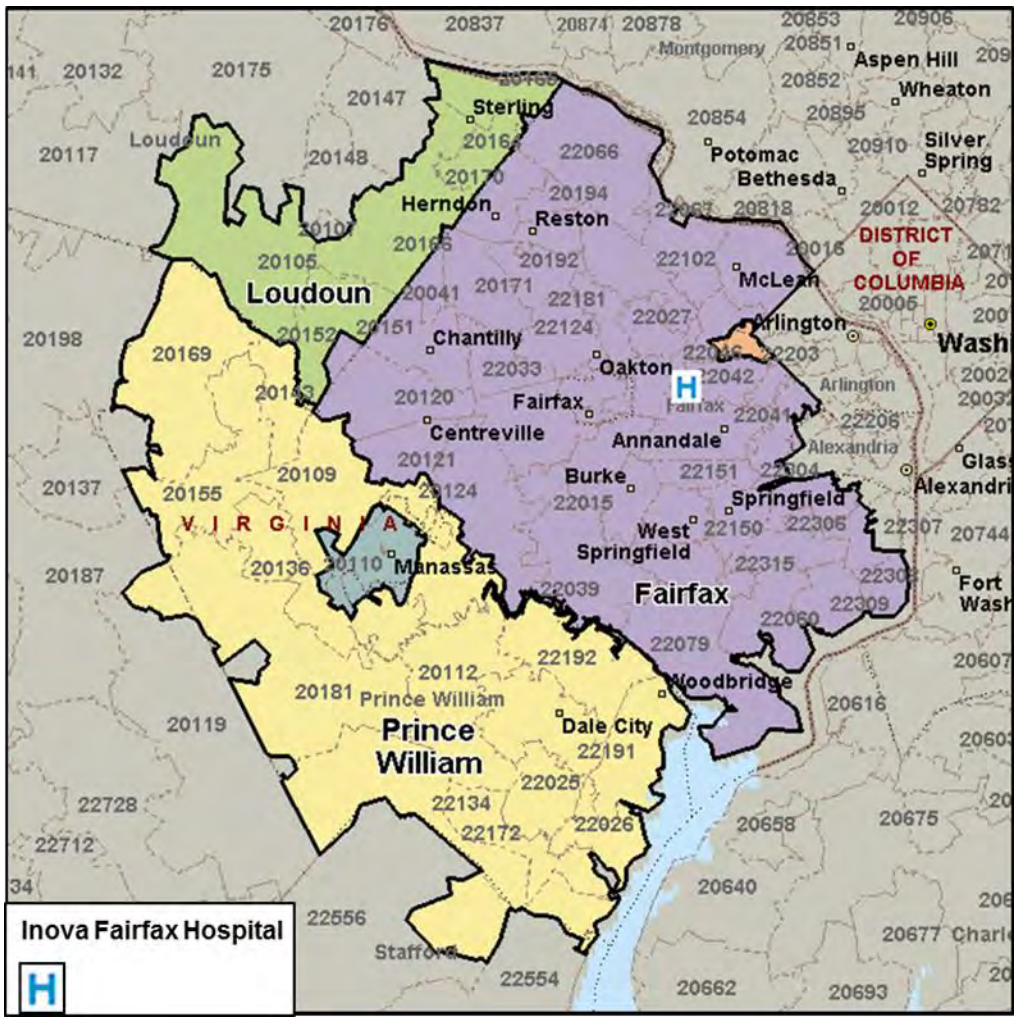
| Subregions | 2014 Population | Percent of 2014 Population |
|---|---|---|
| **Fairfax County Subregions** | **1,119,415** | **64.3%** |
| Annandale/N. Springfield | 73,475 | 4.2% |
| Centreville | 71,256 | 4.1% |
| Chantilly | 18,956 | 1.1% |
| Clifton/Fairfax Station | 36,295 | 2.1% |
| East Fairfax 29/50 Corridor | 73,705 | 4.2% |
| Fairfax City | 59,103 | 3.4% |
| Franconia/Kingstowne | 55,610 | 3.2% |
| GMU/Burke | 73,673 | 4.2% |
| Lincolnia/Bailey's Crossroads | 58,772 | 3.4% |
| Lorton/Newington | 31,186 | 1.8% |
| McLean/Great Falls | 73,297 | 4.2% |
| Mount Vrn South / Ft. Belvoir | 85,797 | 4.9% |
| Oakton/Fair Lakes/S. Herndon | 109,842 | 6.3% |
| Reston/Herndon | 101,590 | 5.8% |
| Springfield | 90,439 | 5.2% |
| Vienna | 64,172 | 3.7% |
| West Falls Church | 42,247 | 2.4% |
| **Loudoun County Subregions** | **129,693** | **7.4%** |
| South Riding/Aldie | 50,300 | 2.9% |
| Sterling/Dulles | 79,393 | 4.6% |
| **Manassas City Subregions** | **88,276** | **5.1%** |
| Manassas West | 88,276 | 5.1% |
| **Prince William County Subgregions** | **403,499** | **23.2%** |
| Manassas East | 58,570 | 3.4% |
| Dale City/Dumfries/Quantico | 122,205 | 7.0% |
| Gainesville/Haymarket/Bull Run | 97,896 | 5.6% |
| Lake Ridge/Occoquan | 62,261 | 3.6% |
| Woodbridge | 62,566 | 3.6% |
| **Community Total** | **1,740,883** | **100.0%** |

Source: Metropolitan Washington Council of Governments, 2015.

The hospital is located in West Falls Church (ZIP code 22042).

The map in **Exhibit 3** portrays the ZIP codes and jurisdictions that comprise the Inova Fairfax Medical Campus community.

**Exhibit 3: Inova Fairfax Medical Campus Community**




Source: Microsoft MapPoint and Inova Health System, 2015.

# SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the Inova Fairfax Medical Campus community.

## Demographics

Population characteristics and changes directly influence community health needs. The total population in the Inova Fairfax Medical Campus community is expected to grow 6 percent from 2015 to 2020 (**Exhibit 4**).

**Exhibit 4: Percent Change in Community Population by Subregion**

| Subregions | Total Population | | | Population | |
|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2010-2015 | 2015-2020 |
| **Fairfax County Subregions** | **1,090,562** | **1,126,828** | **1,164,729** | **3.3%** | **3.4%** |
| Annandale/N. Springfield | 72,235 | 73,788 | 74,833 | 2.2% | 1.4% |
| Centreville | 69,970 | 71,582 | 72,946 | 2.3% | 1.9% |
| Chantilly | 17,648 | 19,298 | 21,021 | 9.4% | 8.9% |
| Clifton/Fairfax Station | 35,855 | 36,406 | 36,654 | 1.5% | 0.7% |
| East Fairfax 29/50 Corridor | 71,823 | 74,186 | 77,617 | 3.3% | 4.6% |
| Fairfax City | 57,182 | 59,593 | 61,298 | 4.2% | 2.9% |
| Franconia/Kingstowne | 54,208 | 55,969 | 57,238 | 3.2% | 2.3% |
| GMU/Burke | 73,043 | 73,832 | 74,132 | 1.1% | 0.4% |
| Lincolnia/Bailey's Crossroads | 58,419 | 58,860 | 59,867 | 0.8% | 1.7% |
| Lorton/Newington | 30,286 | 31,415 | 32,726 | 3.7% | 4.2% |
| McLean/Great Falls | 71,054 | 73,872 | 79,832 | 4.0% | 8.1% |
| Mount Vrn South / Ft. Belvoir | 82,852 | 86,554 | 88,542 | 4.5% | 2.3% |
| Oakton/Fair Lakes/S. Herndon | 104,453 | 111,255 | 114,852 | 6.5% | 3.2% |
| Reston/Herndon | 99,860 | 102,029 | 105,672 | 2.2% | 3.6% |
| Springfield | 87,949 | 91,086 | 94,950 | 3.6% | 4.2% |
| Vienna | 62,891 | 64,497 | 68,389 | 2.6% | 6.0% |
| West Falls Church | 40,835 | 42,608 | 44,162 | 4.3% | 3.6% |
| **Loudoun County Subregions** | **112,421** | **135,255** | **157,096** | **20.3%** | **16.1%** |
| South Riding/Aldie | 36,261 | 54,813 | 72,200 | 51.2% | 31.7% |
| Sterling/Dulles | 76,160 | 80,443 | 84,896 | 5.6% | 5.5% |
| **Manassas City Subregions** | **81,435** | **90,085** | **99,989** | **10.6%** | **11.0%** |
| Manassas West | 81,435 | 90,085 | 99,989 | 10.6% | 11.0% |
| **Prince William County Subgregions** | **369,750** | **412,524** | **448,670** | **11.6%** | **8.8%** |
| Manassas East | 55,047 | 59,487 | 63,772 | 8.1% | 7.2% |
| Dale City/Dumfries/Quantico | 114,831 | 124,168 | 131,823 | 8.1% | 6.2% |
| Gainesville/Haymarket/Bull Run | 86,675 | 100,928 | 112,055 | 16.4% | 11.0% |
| Lake Ridge/Occoquan | 58,391 | 63,269 | 67,457 | 8.4% | 6.6% |
| Woodbridge | 54,807 | 64,672 | 73,563 | 18.0% | 13.7% |
| **Combined Community Total** | **1,654,167** | **1,764,692** | **1,870,483** | **6.7%** | **6.0%** |

Source: Metropolitan Washington Council of Governments, 2015.

Every subregion in the community is projected to experience population growth from 2015 to 2020. Populations in South Riding/Aldie, Woodbridge, Manassas West, and Gainesville/Haymarket/Bull Run are expected to grow the fastest.

**Exhibit 5** shows the community's population by age and sex from 2010 through 2015, with projections to 2020.

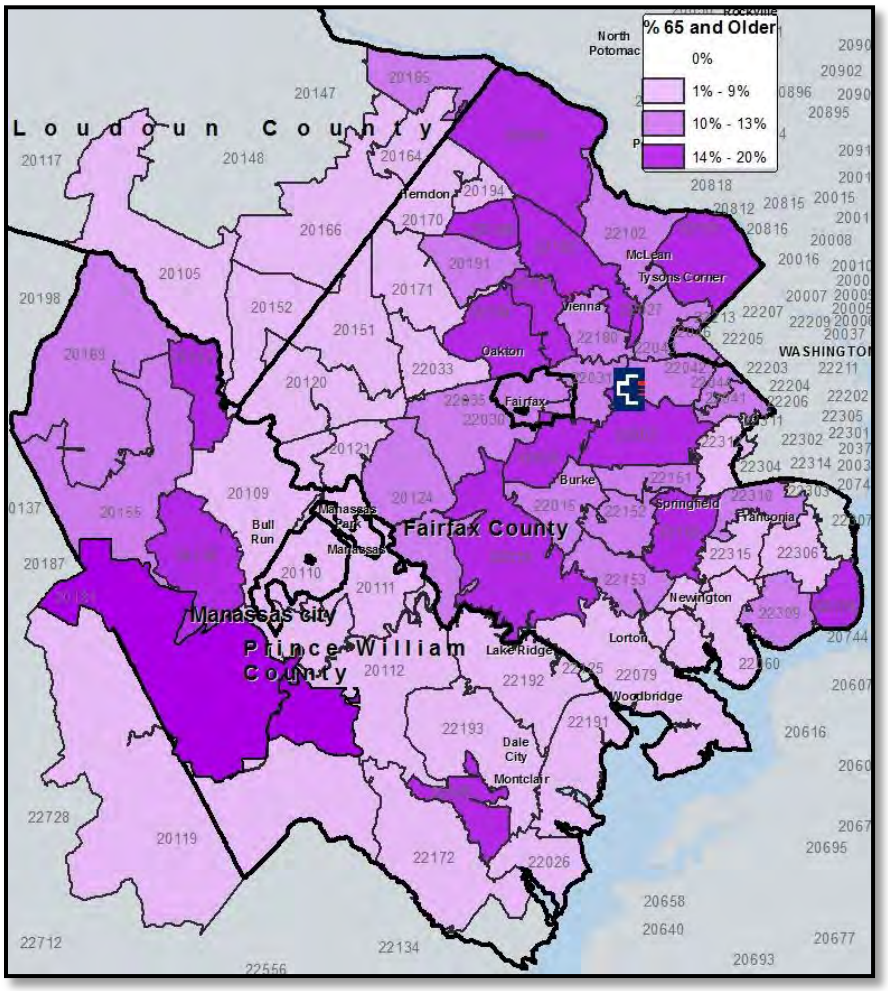
**Exhibit 5: Percent Change in Population by Age/Sex Cohort, 2015-2020**

| Age/Sex Cohort | Community Population | | | % Change in Population | |
|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2010-2015 | 2015-2020 |
| 0-17 | 428,239 | 443,596 | 456,689 | 3.6% | 3.0% |
| Female 18-44 | 317,053 | 320,358 | 317,504 | 1.0% | -0.9% |
| Male 18-44 | 316,458 | 325,922 | 327,926 | 3.0% | 0.6% |
| 45-54 | 262,033 | 267,508 | 268,108 | 2.1% | 0.2% |
| 55-64 | 186,002 | 218,667 | 251,905 | 17.6% | 15.2% |
| 65+ | 144,382 | 188,642 | 248,352 | 30.7% | 31.7% |
| **Total** | **1,654,167** | **1,764,692** | **1,870,483** | **6.7%** | **6.0%** |

Source: Metropolitan Washington Council of Governments and Claritas, 2015.

The number of persons aged 65 years and older is projected to increase by nearly 32 percent between 2015 and 2020. The population 55 to 64 years of age is projected to increase by over 15 percent. The growth of older populations is likely to lead to a growing need for health services, since on an overall per-capita basis, older individuals typically need and use more services than younger persons.

**Exhibit 6: Percent of Population Aged 65+ by ZIP Code, 2014**



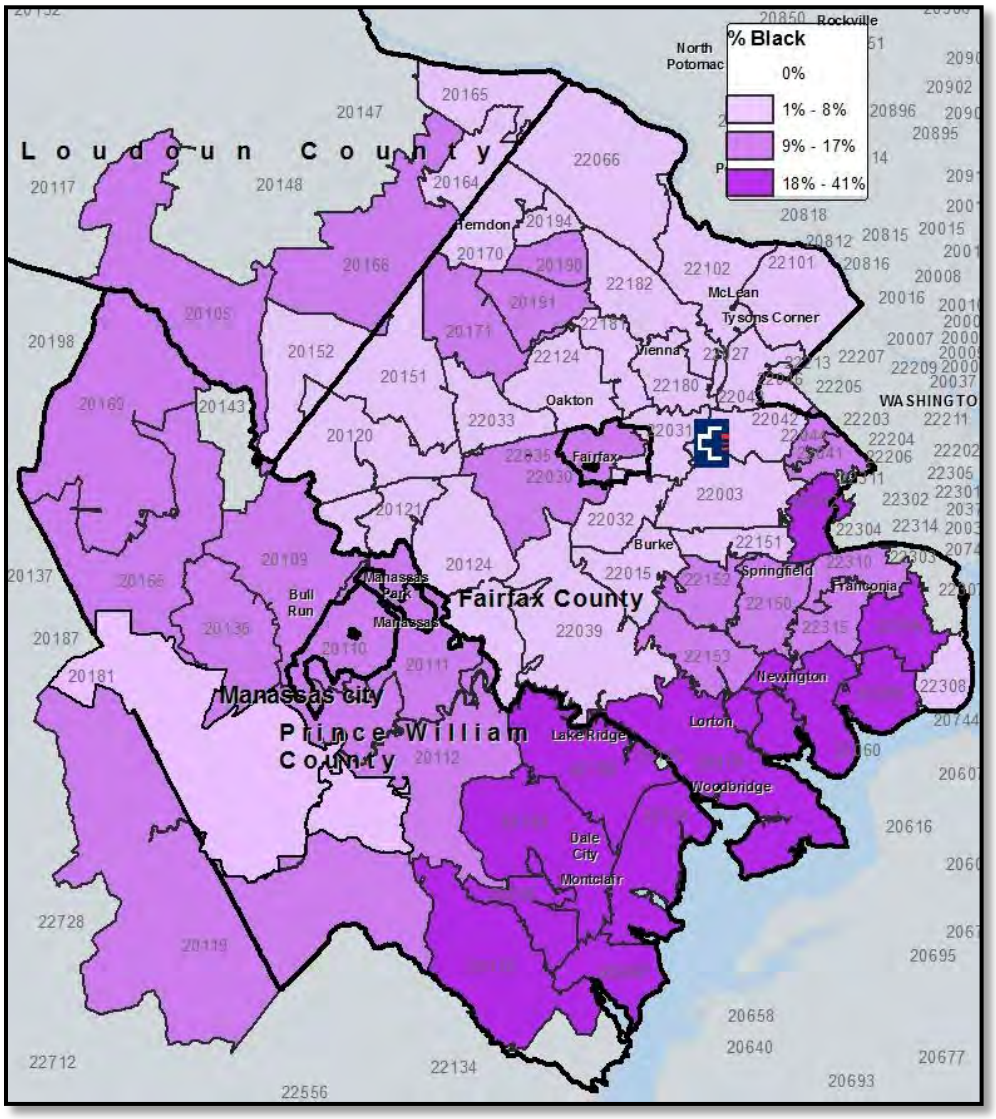

Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

**Exhibit 6** illustrates the percent of the population 65 years of age and older in the community by ZIP code. Certain ZIP codes had the highest proportions of populations aged 65 and over (22101/McLean/Great Falls, 20143/Gainesville/Haymarket/Bull Run, 22027/Vienna), each over 16 percent. ZIP code 22134 in Prince William County (Dale City/Dumfries/Quantico) had the lowest proportion.

According to Fairfax County, between 2000 and 2010 all of the net population growth in the county was from ethnic and racial minorities. U.S. Census data indicate that the percent of the population White/Caucasian (excluding Hispanics and Latinos) declined between 2010 and 2014 across Northern Virginia, and that across the Inova Fairfax Medical Campus community growth rates for Hispanic (or Latino) and Asian populations have been well above rates for Blacks/African Americans and Whites/Caucasians.

**Exhibits 7 through 11** show locations in the community where the percentages of the population that are Black, Hispanic (or Latino), Asian, Foreign-Born, and "not proficient in English" were highest in 2014.

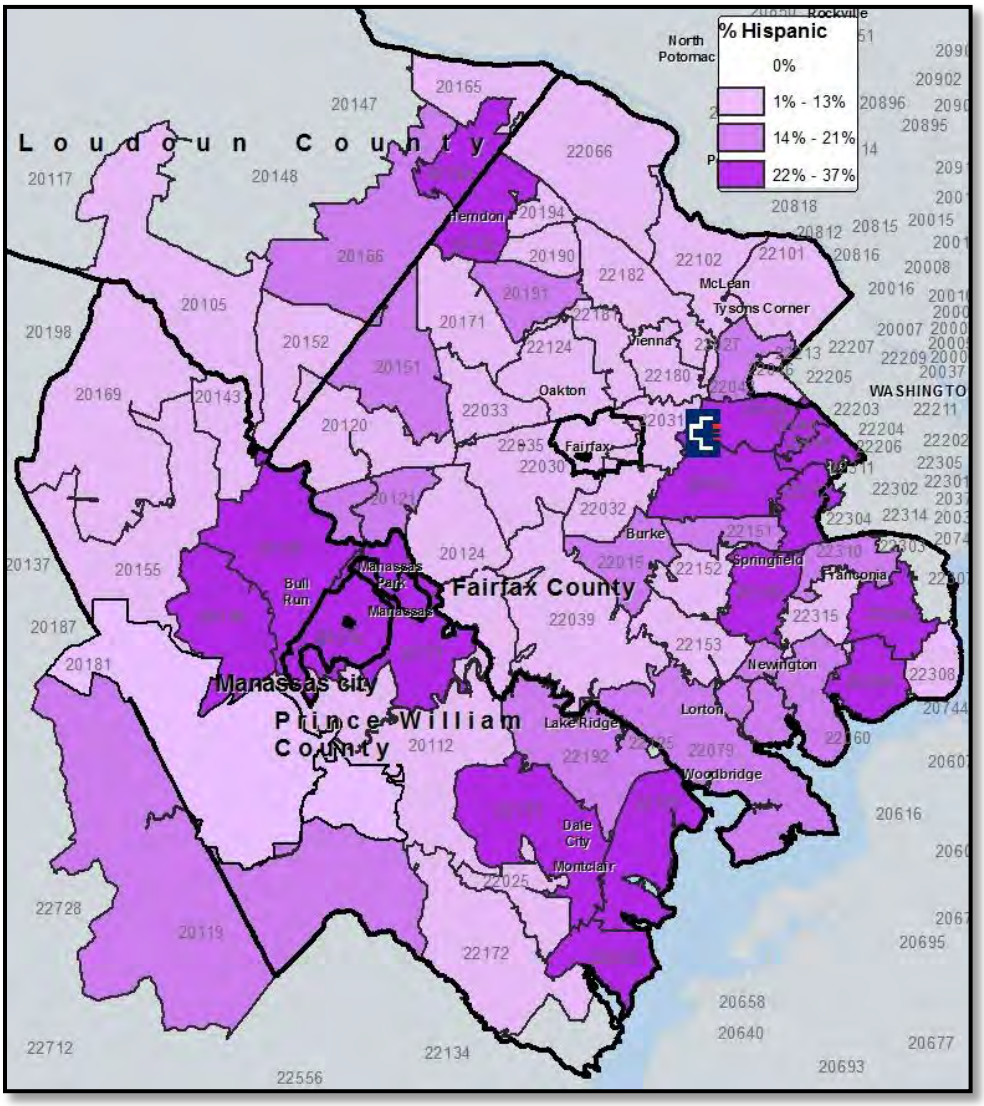
**Exhibit 7: Percent of Population - Black, 2014**




Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

ZIP codes where the percent of the population that is Black (African American) is highest were in south-eastern areas of Prince William County (ZIP codes 22172, 22026, 22193, and 2219), each at over 25 percent.

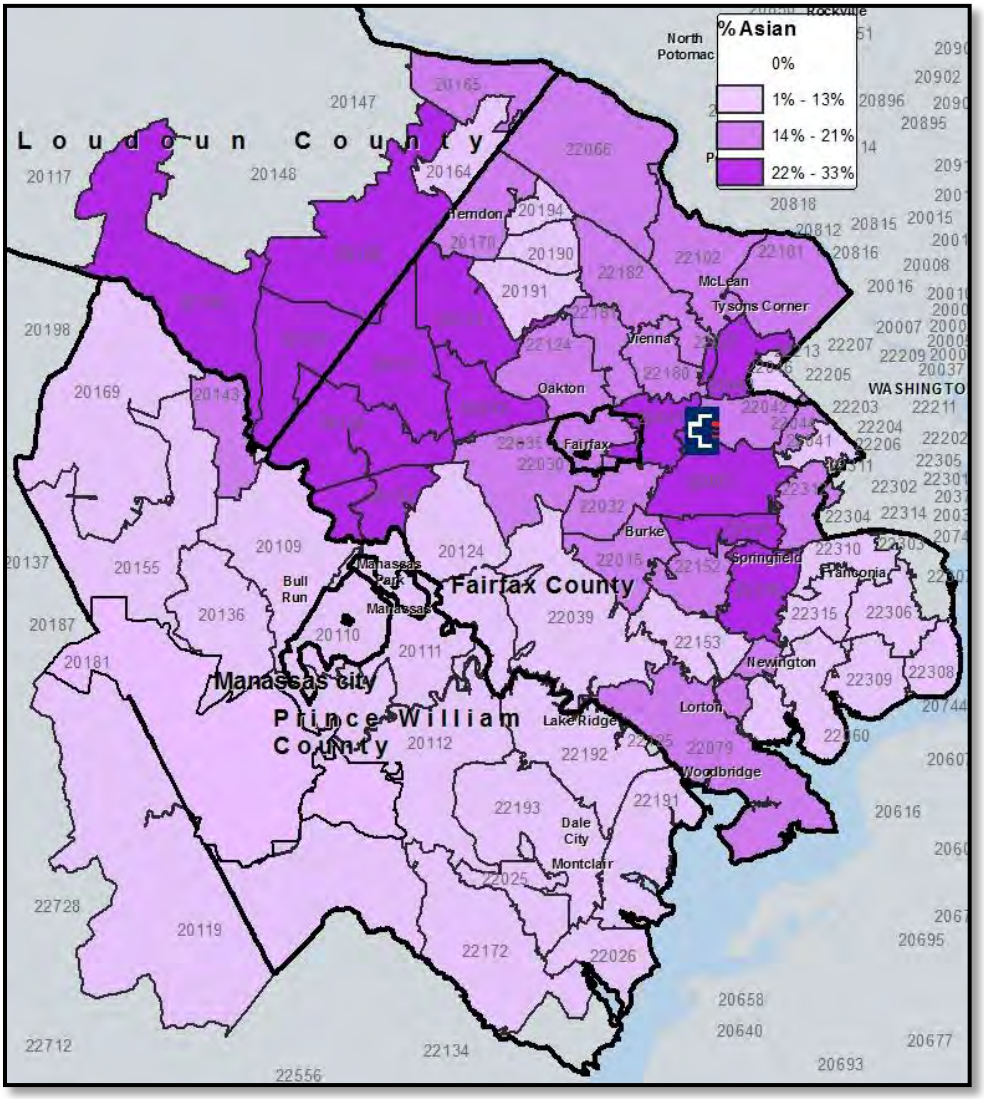
**Exhibit 8: Percent of Population - Hispanic (or Latino), 2014**




Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

ZIP codes where the percent of the population that is Hispanic (or Latino) is highest were in Prince William County (ZIP codes 20109, 22191, 20111), Loudoun County (20164), Fairfax County (22041), and Manassas City (20110), each at above 30 percent. According to the U.S. Census, the Hispanic (or Latino) population in Fairfax County increased by 11.6 percent between 2011 and 2014.

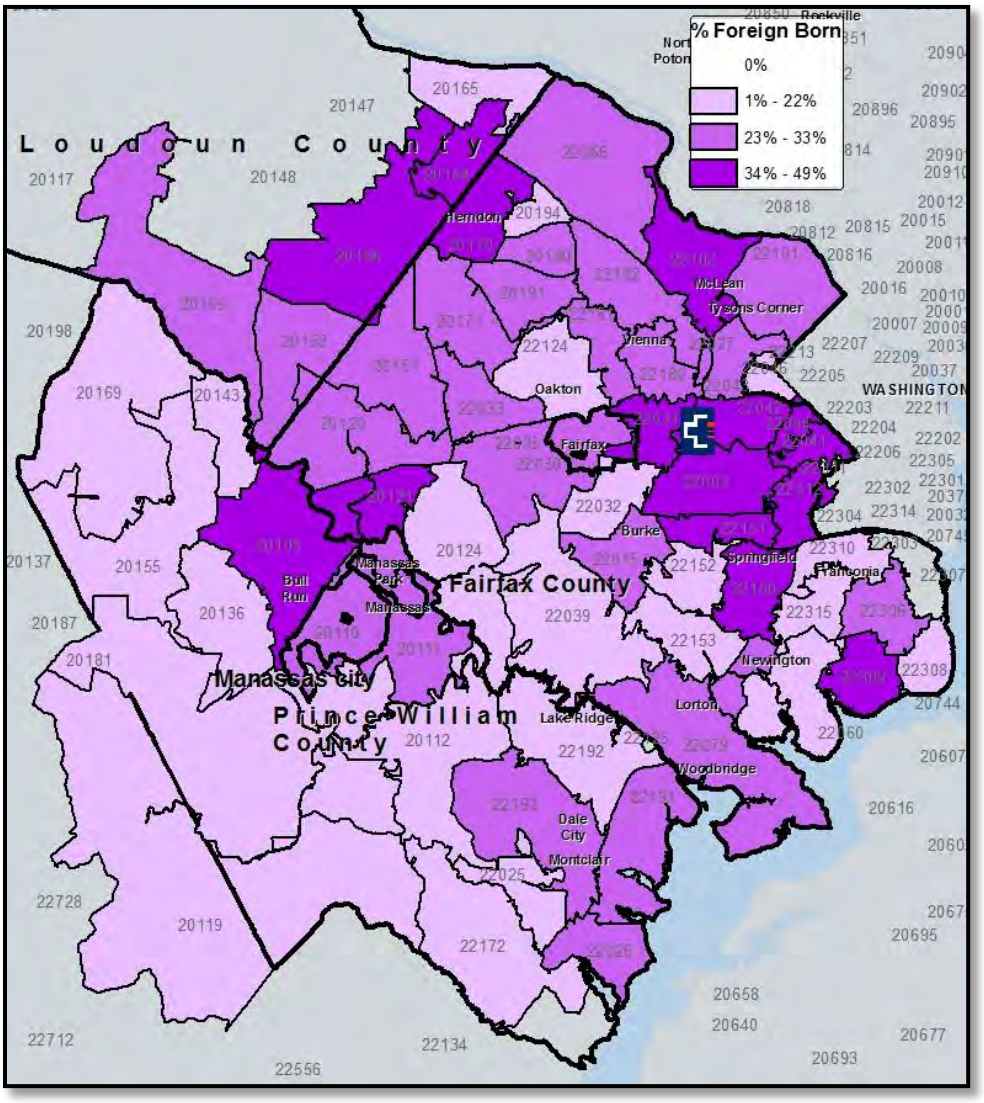
**Exhibit 9: Percent of Population - Asian, 2014**




Source U.S. Census, ACS 5-Year Estimates, 2010-2014

ZIP codes where the percent of the population that is Asian is highest were in Vienna and Oakton/Fair Lakes/South Herndon (ZIP codes 22027 and 20171) in Fairfax County and in ZIP code 20152 in Loudoun County. According to the U.S. Census, the Asian population in Fairfax County increased by 8.8 percent between 2011 and 2014.

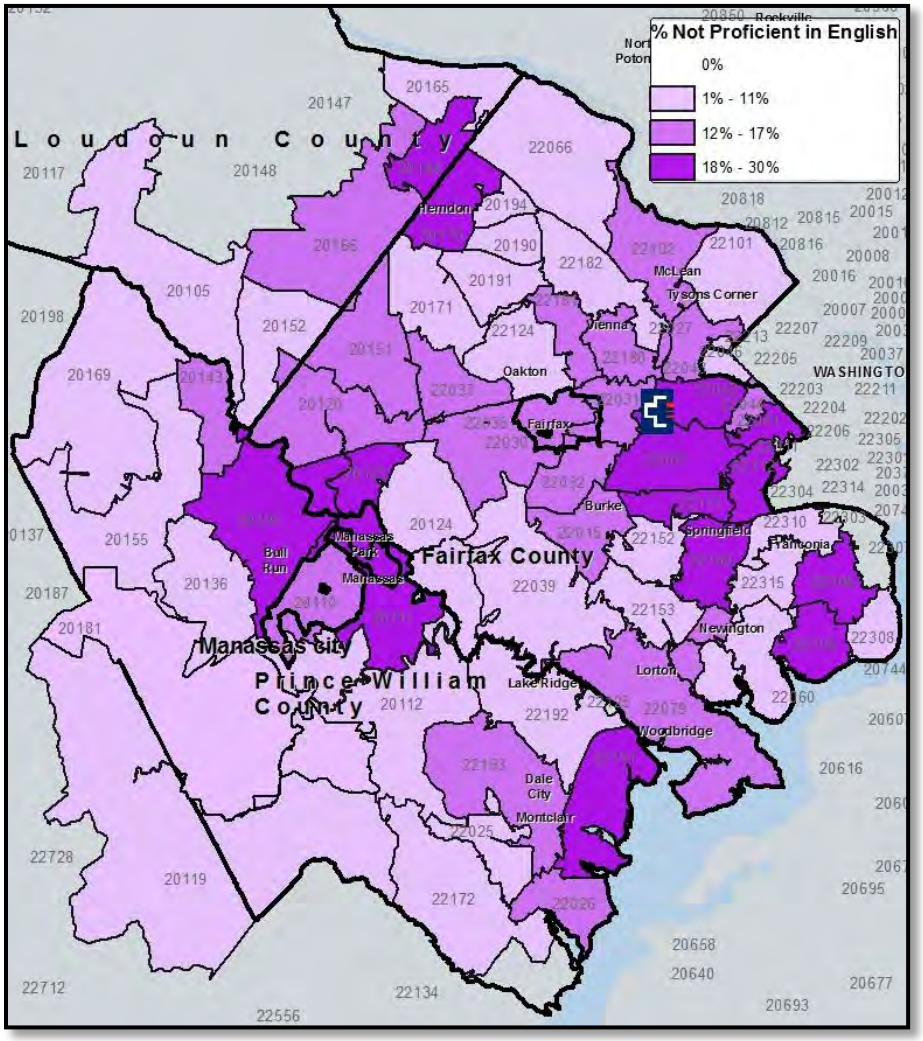
**Exhibit 10: Percent of Population – Foreign-Born, 2014**




Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

In ZIP codes 22041, 22312, and 22150, the percent of the population foreign-born exceeded 44 percent in 2014.

**Exhibit 11: Percent of Population - Not Proficient in English, 2014**




Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

In 2014, over 30 percent of the residents of ZIP code 22150 were not proficient in English. Over 23 percent of those in ZIP codes 20164, 22003, 20121, 20109, and 22151 shared this characteristic.

Data regarding residents without a high school diploma, with a disability, and linguistically isolated are presented in **Exhibit 12** by city and county, for Virginia and the United States.

**Exhibit 12: Other Socioeconomic Indicators, 2014**

| Measure | Fairfax County | Loudoun County | Prince William County | Virginia | U.S. |
|---|---|---|---|---|---|
| Population 25+ without High School Diploma | 8.1% | 6.5% | 10.4% | 12.1% | 13.7% |
| Population with a Disability | 6.4% | 5.2% | 6.8% | 11.0% | 12.3% |
| Population Linguistically Isolated | 14.5% | 10.0% | 11.8% | 5.6% | 8.6% |

Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

**Exhibit 12** indicates that:

- Fairfax, Loudoun, and Prince William have lower percentages of residents aged 25 years and older without a high school diploma than Virginia and United States averages.
- These areas had a lower percentage of the population with a disability, at about half the Virginia and United States averages.
- Compared to Virginia and national averages, these areas had a higher proportion of the population that is linguistically isolated. Linguistic isolation is defined as residents who speak a language other than English and speak English less than "very well."

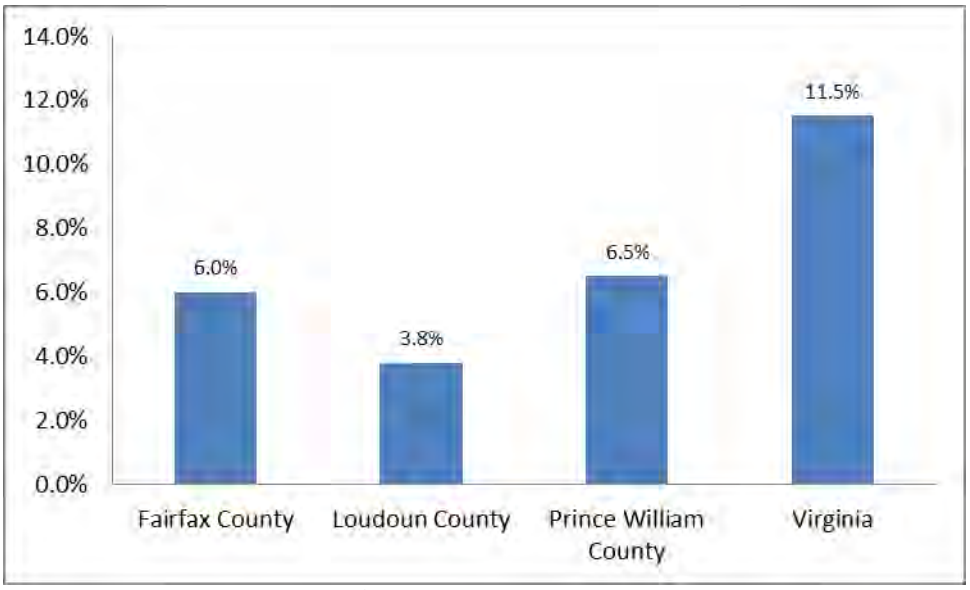
## Economic indicators

The following categories of economic indicators with implications for health were assessed: (1) people in poverty; (2) unemployment rate; (3) insurance status; and (4) crime.

### People in Poverty

Many health needs have been associated with poverty. According to the U.S. Census, in 2014 approximately 11.5 percent of people in Virginia were living in poverty. Fairfax, Loudoun, and Prince William reported overall poverty rates well below the Virginia average (**Exhibit 13**).

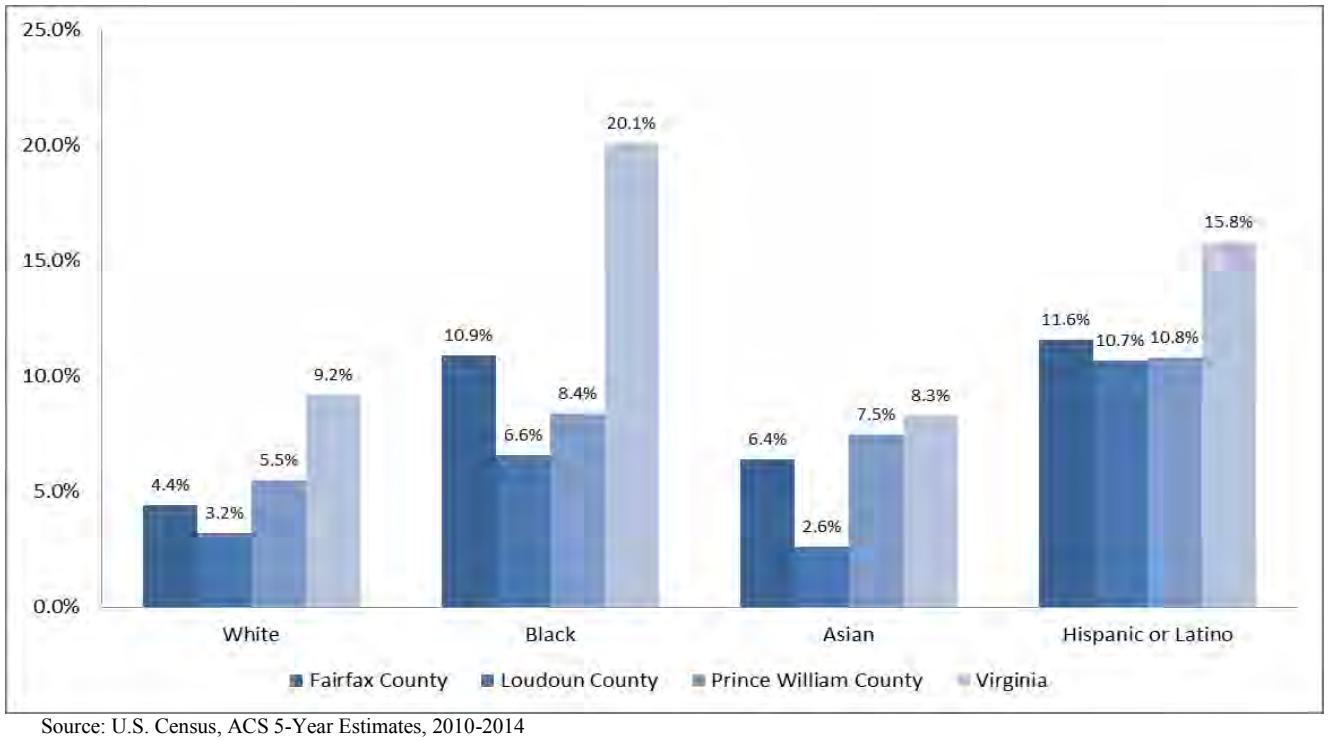
**Exhibit 13**: **Percent of People in Poverty, 2014**




Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

While poverty rates in the community served by the hospital appear lower than the Commonwealth-wide average, variation in poverty rates is present across racial and ethnic categories (**Exhibit 14**).

**Exhibit 14: Poverty Rates by Race and Ethnicity, 2014**




Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

Poverty rates across the community have been comparatively high for African American, Hispanic (or Latino), and Asian residents. In counties served by the hospital, the poverty rates for Hispanic (or Latino) residents are highest. Overall, the community's poverty rates are below Virginia rates for their cohorts.

**Exhibit 15** portrays (in blue shading) the low income census tracts in this community. The U.S. Department of Agriculture defines "low income census tracts" as areas where poverty rates are 20 percent or higher or where median family incomes are 80 percent or lower than within the metropolitan area.

**Exhibit 15: Low Income Census Tracts**

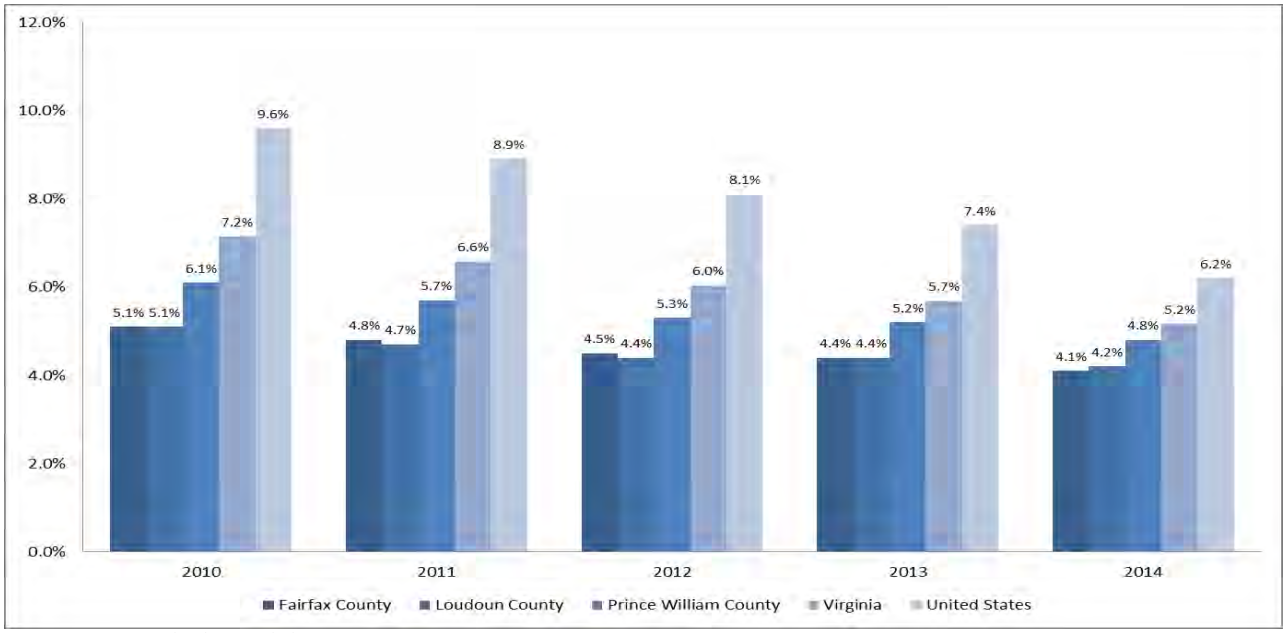

Source: US Department of Agriculture Economic Research Service, ESRI, 2016.

Low income census tracts are present in Fairfax County along the Richmond Highway corridor, in the areas surrounding Manassas City, and in southeastern Prince William County.

### Unemployment

Unemployment is problematic because many receive health insurance coverage through their (or a family member's) employer. If unemployment rises, employer based health insurance can become less available. **Exhibit 16** shows unemployment rates for 2010 through 2014 for Fairfax County, Loudoun County, and Prince William County, with Virginia and national rates for comparison.

**Exhibit 16: Unemployment Rates, 2010-2014**



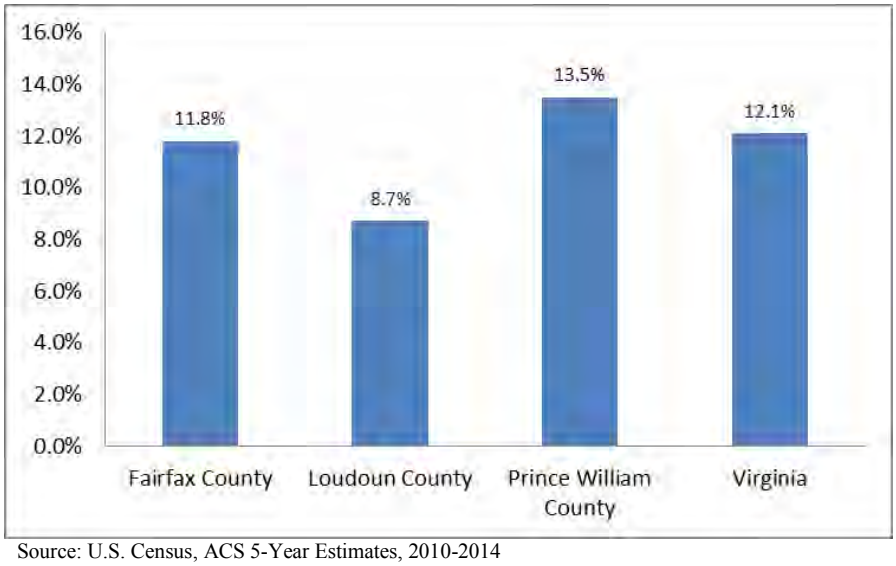

Source: Bureau of Labor Statistics, 2010-2014.

Unemployment rates fell significantly between 2010 and 2014. While unemployment rates in the areas served by the hospital have been well below Virginia and national averages, the decrease from 2010-2014 has been comparatively slower.

### Insurance Status

**Exhibit 17** presents the estimated percent of the population in Fairfax, Loudoun, and Prince William Counties and the Commonwealth of Virginia without health insurance (uninsured).

**Exhibit 17: Percent of the Population without Health Insurance, 2014**




Source: U.S. Census, ACS 5-Year Estimates, 2010-2014

At 13.5 percent, the uninsurance rate in Prince William County exceeded the Commonwealth-wide average.

### Virginia Medicaid Expansion

The uninsurance rate would be lower if Virginia had expanded eligibility for Medicaid as originally contemplated by the Patient Protection and Affordable Care Act (ACA, 2010). Subsequent to the ACA's passage, a June 2012 Supreme Court ruling provided states with discretion regarding whether or not to expand Medicaid eligibility. To date, Virginia has been one of the states that has not expanded Medicaid. As a result, Medicaid eligibility in Virginia has remained very limited.

In Virginia, Medicaid is primarily available to children in low-income families, pregnant women, low-income elderly persons, individuals with disabilities, and parents who meet specific income thresholds.[3] Adults without children or disabilities are ineligible

It has been estimated that over 400,000 Virginians could gain coverage if Medicaid were expanded. Across the United States, uninsurance rates have fallen most in states that decided to expand Medicaid.[4]

[3] DMAS.
[4] See: http://hrms.urban.org/briefs/Increase-in-Medicaid-under-the-ACA-reduces-uninsurance.html

### Crime

**Exhibit 18** provides certain crime statistics for counties served by Inova Fairfax Medical Campus and for Virginia. Cells are shaded if the statistic is at all worse than Virginia averages.

**Exhibit 18: Crime Rates by Type and County, Per 100,000, 2014**

| Crime | Fairfax County | Loudoun County | Prince William County | Virginia |
|---|---|---|---|---|
| Violent Crime | 85.8 | 65.2 | 177.5 | 199.6 |
| Murder/Non-negligent manslaughter | 0.9 | 0.9 | 1.6 | 4.1 |
| Rape | 13.4 | 15.0 | 20.3 | 28.2 |
| Robbery | 35.8 | 12.1 | 47.8 | 52.4 |
| Aggravated assault | 35.6 | 37.2 | 107.7 | 114.8 |
| Property Crime | 1,298.9 | 766.3 | 1,363.9 | 1,963.6 |
| Burglary | 82.4 | 50.8 | 148.3 | 282.5 |
| Larceny-theft | 1,150.0 | 682.2 | 1,147.9 | 1,587.4 |
| Motor vehicle theft | 66.6 | 33.3 | 67.6 | 93.6 |

Source: FBI, 2014.

All crime rates for the three counties in the community were below Virginia averages for 2014.

## Local Health Status and Access Indicators

This section assesses health status and access indicators for the Inova Fairfax Medical Campus community. Data sources include: (1) County Health Rankings, (2) the Centers for Disease Control and Prevention's (CDC) Community Health Status Indicators, (3) the Virginia Department of Health, (4) the CDC's Behavioral Risk Factor Surveillance System, and (5) Youth Risk Behavior Surveillance System data gathered by the CDC and officials from Fairfax.

Throughout this section, data and cells are highlighted if indicators are unfavorable – because they exceed benchmarks (typically, Virginia averages). Where confidence interval data are available, cells are highlighted only if variances are unfavorable and also statistically significant.

### County Health Rankings

*County Health Rankings*, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation, incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." These health factors and outcomes are composite measures based on several

variables grouped into the following categories: health behaviors, clinical care,[5] social and economic factors, and physical environment.[6] *County Health Rankings* is updated annually. *County Health Rankings 2016* relies on data from 2006 to 2015, with most data from 2010 to 2013.

**Exhibit 19** presents 2013 and 2016 rankings for each available indicator category. Rankings indicate how the county (or city) ranked in relation to all 134 counties (or cities) in the Commonwealth, with 1 indicating the most favorable ranking and 134 the least favorable. The table also indicates if rankings fell between 2013 and 2016. For some indicators, for example "Excessive drinking," values are available for fewer than 134 counties (or cities). For that indicator, only 97 comparison jurisdictions were available for the 2013 County Health Ranking.

Indicators in the exhibit are shaded based on the jurisdiction's percentile for the state ranking (light shading indicates the jurisdiction is in the bottom 50$^{th}$ percentile and dark shading indicated the jurisdiction is in the bottom 25$^{th}$ percentile). For example, Loudoun County compared unfavorably to other counties in Virginia for the percentage of Medicare eligible individuals receiving diabetic screening. Loudoun's rank of 106 out of 134 counties placed it in the bottom 25$^{th}$ percentile in the 2016 rankings.

[5] A composite measure of Access to Care, which examines the percent of the population without health insurance and ratio of population to primary care physicians, and Quality of Care, which examines the hospitalization rate for ambulatory care sensitive conditions, whether diabetic Medicare patients are receiving HbA1C screening, and percent of chronically ill Medicare enrollees in hospice care in the last 8 months of life.

[6] A composite measure that examines Environmental Quality, which measures the number of air pollution-particulate matter days and air pollution-ozone days, and Built Environment, which measures access to healthy foods and recreational facilities and the percent of restaurants that are fast food.

## Exhibit 19: County Health Rankings, 2013 and 2016

| | Fairfax County | | | Loudoun County | | | Prince William County | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2016 | Rank Change | 2013 | 2016 | Rank Change | 2013 | 2016 | Rank Change |
| **Health Outcomes** | **1** | **2** | ↓ | **2** | **1** | | **10** | **9** | |
| **Length of Life** | **2** | **3** | ↓ | **1** | **1** | | **8** | **10** | ↓ |
| **Quality of Life** | **3** | **2** | | **8** | **1** | | **41** | **12** | |
| **Health Factors** | **4** | **3** | | **2** | **4** | ↓ | **21** | **21** | |
| **Health Behaviors** | **5** | **1** | | **4** | **3** | | **31** | **10** | |
| Adult smoking* | 16 | 1 | | 14 | 2 | | 40 | 17 | |
| Adult obesity | 4 | 2 | | 3 | 4 | ↓ | 23 | 12 | |
| Excessive drinking** | 95 | 88 | | 92 | 126 | ↓ | 87 | 104 | ↓ |
| STIs | 19 | 24 | ↓ | 9 | 18 | ↓ | 58 | 66 | ↓ |
| Teen births | 12 | 13 | ↓ | 10 | 7 | | 54 | 49 | |
| **Clinical Care** | **15** | **13** | | **9** | **21** | ↓ | **76** | **72** | |
| Primary care physicians | 26 | 19 | | 43 | 34 | | 84 | 78 | |
| Dentists | 13 | 20 | ↓ | 36 | 38 | ↓ | 54 | 54 | |
| Mental health providers | 23 | 34 | ↓ | 47 | 46 | | 83 | 56 | |
| Preventable hospital stays | 7 | 7 | | 35 | 50 | ↓ | 46 | 33 | |
| Diabetic screening | 107 | 97 | | 103 | 106 | ↓ | 102 | 104 | ↓ |
| **Social & Economic Factors** | **2** | **5** | ↓ | **1** | **2** | ↓ | **18** | **20** | ↓ |
| Some college | 8 | 6 | | 4 | 3 | | 25 | 23 | |
| Unemployment | 3 | 7 | ↓ | 2 | 8 | ↓ | 8 | 29 | ↓ |
| Injury deaths | - | 5 | | - | 2 | | - | 8 | |
| **Physical Environment** | **46** | **28** | | **35** | **116** | ↓ | **64** | **53** | |
| Air pollution | 69 | 66 | | 100 | 83 | | 56 | 68 | ↓ |
| Severe housing problems | - | 81 | | - | 59 | | - | 93 | |

*2013 Data Ranked out of 98 Counties with Data Available

**2013 Data Ranked out of 97 Counties with Data Available

Source: County Health Rankings, 2016.

Overall, Fairfax County, Loudoun County, and Prince William County compared favorably in most indicator categories to the other cities and counties in Virginia. Exceptions include excessive drinking and diabetic screening rates (for Medicare eligible individuals). Fairfax County also compared unfavorably in severe housing problems. Loudoun County compared unfavorably in physical environment and air pollution. Prince William County compared unfavorable in clinical care, primary care physicians rate, air pollution, and severe housing problems. Rankings in all jurisdictions fell for STIs and unemployment between 2013 and 2016. Rankings for Loudoun and Prince William also noticeably fell in excessive drinking.

**Exhibit 20** provides data for each underlying indicator of the composite categories in the County Health Rankings.[7] The exhibit also includes national averages. Cells in the exhibit are shaded if the indicator for the city or county exceeded the Virginia average at all for that indicator, and are shaded darker if the value is 25% worse than Virginia.

[7] County Health Rankings provides details about what each indicator measures, how it is defined, and data sources at http://www.countyhealthrankings.org/sites/default/files/resources/2013Measures_datasources_years.pdf

## Exhibit 20: County Health Rankings Data Compared to Virginia and U.S. Average, 2016

| Indicator Category | Data | Fairfax County | Loudoun County | Prince William County | Virginia | U.S. |
|---|---|---|---|---|---|---|
| **Health Outcomes** | | | | | | |
| Length of Life | Years of potential life lost before age 75 per 100,000 population | 3,402.1 | 3,227.5 | 4,373.5 | 6,147.1 | 7,700.0 |
| Quality of Life | Percent of adults reporting fair or poor health | 10.3 | 10.5 | 13.5 | 14.2 | 16.0 |
| | Average number of physically unhealthy days reported in past 30 days | 2.6 | 2.6 | 2.8 | 3.2 | 3.7 |
| | Average number of mentally unhealthy days reported in past 30 days | 2.5 | 2.6 | 2.7 | 3.1 | 3.7 |
| | Percent of live births with low birthweight (<2500 grams) | 7.1 | 6.6 | 7.3 | 8.2 | 8.0 |
| **Health Factors** | | | | | | |
| **Health Behaviors** | | | | | | |
| Adult Smoking | Percent of adults that report smoking >= 100 cigarettes and currently smoking | 12.3 | 13.0 | 15.3 | 16.9 | 18.0 |
| Adult Obesity | Percent of adults that report a BMI >= 30 | 19.9 | 21.8 | 25.2 | 27.3 | 31.0 |
| Food Environment Index | Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best) | 9.6 | 10.0 | 9.3 | 8.3 | 7.2 |
| Physical Inactivity | Percent of adults aged 20 and over reporting no leisure-time physical activity | 15.4 | 19.5 | 18.1 | 22.2 | 28.0 |
| Access to Exercise Opportunities | Percent of population with adequate access to locations for physical activity | 100.0 | 89.0 | 91.0 | 80.7 | 62.0 |
| Alcohol Impaired Driving Deaths | Percent of driving deaths with alcohol involvement | 26.0 | 33.8 | 22.4 | 31.2 | 30.0 |
| Excessive Drinking | Binge plus heavy drinking | 16.6 | 18.7 | 17.5 | 16.8 | 17.0 |
| STDs | Chlamydia rate per 100,000 population | 182.3 | 158.2 | 311.7 | 407.0 | 287.7 |
| Teen Births | Teen birth rate per 1,000 female population, ages 15-19 | 13.1 | 10.9 | 26.6 | 27.5 | 40.0 |
| **Clinical Care** | | | | | | |
| Uninsured | Percent of population under age 65 without health insurance | 12.3 | 9.1 | 14.5 | 14.0 | 17.0 |
| Primary Care Physicians | Ratio of population to primary care physicians | 973:1 | 1350:1 | 2345:1 | 1329:1 | 1990:1 |
| Dentists | Ratio of population to dentists | 1033:1 | 1650:1 | 2075:1 | 1570:1 | 2590:1 |
| Mental Health Providers | Ratio of population to mental health providers | 650:1 | 781:1 | 1005:1 | 685:1 | 1060:1 |
| Preventable Hospital Stays | Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees | 32.9 | 46.7 | 43.1 | 49.1 | 60.0 |
| Diabetic Screening | Percent of diabetic Medicare enrollees that receive HbA1c monitoring | 85.6 | 84.9 | 85.3 | 86.6 | 85.0 |
| Mammography Screening | Percent of female Medicare enrollees, ages 67-69, that receive mammography screening | 61.0 | 58.0 | 56.0 | 63.0 | 61.0 |

Source: County Health Rankings, 2016.

## Exhibit 20: County Health Rankings Data Compared to Virginia and U.S. Average, 2016 (continued)

| Indicator Category | Data | Fairfax County | Loudoun County | Prince William County | Virginia | U.S. |
|---|---|---|---|---|---|---|
| **Social & Economic Factors** | | | | | | |
| High School Graduation | Percent of ninth-grade cohort that graduates in four years | 86.0 | 93.0 | 84.0 | 84.6 | 86.0 |
| Some College | Percent of adults aged 25-44 years with some post-secondary education | 79.9 | 82.9 | 69.4 | 68.8 | 56.0 |
| Unemployment | Percent of population age 16+ unemployed but seeking work | 4.1 | 4.2 | 4.8 | 5.2 | 6.0 |
| Children in poverty | Percent of children under age 18 in poverty | 8.7 | 4.4 | 10.4 | 15.9 | 23.0 |
| Income Inequality | Ratio of household income at the 80th percentile to income at the 20th percentile | 3.8 | 3.3 | 3.5 | 4.8 | 4.4 |
| Children in single-parent households | Percent of children that live in a household headed by single parent | 19.2 | 15.3 | 23.1 | 30.0 | 32.0 |
| Social Associations | Number of associations per 10,000 population | 8.2 | 6.9 | 6.0 | 11.3 | 13.0 |
| Violent Crime | Number of reported violent crime offenses per 100,000 population | 90.0 | 88.5 | 148.4 | 200.2 | 199.0 |
| Injury Deaths | Injury mortality per 100,000 | 30.0 | 25.9 | 33.0 | 52.0 | 74.0 |
| **Physical Environment** | | | | | | |
| Air Pollution | The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county | 12.7 | 12.8 | 12.7 | 12.7 | 11.9 |
| Severe Housing Problems | Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities | 14.7 | 13.1 | 15.9 | 15.4 | 14.0 |
| Drive Alone to Work | Percent of the workforce that drives alone to work | 72.1 | 78.0 | 73.5 | 77.5 | 80.0 |
| Long Commute- Drive Alone | Among workers who commute in their car alone, the percent that commute more than 30 minutes | 49.6 | 51.0 | 61.7 | 38.2 | 29.0 |

Source: County Health Rankings, 2016.

**Exhibit 20** highlights the following comparatively unfavorable indicators:

- Alcohol impaired driving deaths in Loudoun,
- Binge plus heavy drinking (Loudoun and Prince William),
- Percent of population without health insurance in Prince William,
- The supply of primary care physicians, dentists, and mental health providers (Loudoun and Prince William),
- Percent of diabetic Medicare enrollees that receive HbA1c monitoring,
- Percent of female Medicare enrollees that receive mammography screening,
- High school graduation rate in Prince William County,
- The rate of social associations,
- Average air particulate matter (pollution),
- Percent of households with severe housing problems in Prince William,
- Percent of workforce that drives alone to work in Loudoun, and
- Percent of workers who commute in their car alone and drive more than 30 minutes.

### Community Health Status Indicators

The Centers for Disease Control and Prevention's *Community Health Status Indicators* provide health profiles for all 3,143 counties in the United States. Counties are assessed using 44 metrics associated with health outcomes including health care access and quality, health behaviors, social factors, and the physical environment.

The *Community Health Status Indicators* allow comparisons between a given county to other "peer counties." Peer counties are assigned based on 19 variables including population size, population growth, population density, household income, unemployment, percent children, percent elderly and poverty rates.

**Exhibit 21** compares Fairfax, Loudoun, and Prince William to peer counties and cities and highlights community health issues found to rank in the bottom quartile of the jurisdictions included in the analysis.

## Exhibit 21: Community Health Status Indicators, 2015

| Category | Indicator | Fairfax County | Loudoun County | Prince William County |
|---|---|---|---|---|
| Mortality | Alzheimer's Disease Deaths | | | |
| | Cancer Deaths | | | |
| | Chronic Kidney Disease Deaths | | | |
| | Chronic Lower Respiratory Disease (CLRD) Deaths | | | |
| | Coronary Heart Disease Deaths | | | |
| | Diabetes Deaths | | | |
| | Female Life Expectancy | | | |
| | Male Life Expectancy | | | |
| | Motor Vehicle Deaths | | | |
| | Stroke Deaths | | | |
| | Unintentional Injury (including motor vehicle) | | | |
| Morbidity | Adult Diabetes | | | |
| | Adult Obesity | | | |
| | Adult Overall Health Status | | | |
| | Alzheimer's Disease/Dementia | | | |
| | Cancer | | | |
| | Gonorrhea | | | |
| | HIV | | | |
| | Older Adult Asthma | | | |
| | Older Adult Depression | | | |
| | Preterm Births | | | |
| | Syphilis | | | |
| Health Care Access and Quality | Cost Barrier to Care | | | |
| | Older Adult Preventable Hospitalizations | | | |
| | Primary Care Provider Access | | | |
| | Uninsured | | | |
| Health Behaviors | Adult Binge Drinking | | | |
| | Adult Female Routine Pap Tests | | | |
| | Adult Physical Inactivity | | | |
| | Adult Smoking | | | |
| | Teen Births | | | |
| Social Factors | Children in Single-Parent Households | | | |
| | High Housing Costs | | | |
| | Inadequate Social Support | | | |
| | On Time High School Graduation | | | |
| | Poverty | | | |
| | Unemployment | | | |
| | Violent Crime | | | |
| Physical Environment | Access to Parks | | | |
| | Annual Average PM2.5 Concentration | | | |
| | Drinking Water Violations | | | |
| | Housing Stress | | | |
| | Limited Access to Healthy Food | | | |
| | Living Near Highways | | | |

Source: Community Health Status Indicators, 2015.

The CHSI data indicate that:

- Fairfax County compares favorably to its peer counties in most areas, with HIV morbidity, binge drinking, on time high school graduation, and the number of people living near highways the exceptions.
- Loudoun County also compares favorably except for housing costs, housing stress, and access to parks.
- Prince William County compares unfavorably to its peer counties for many more indicators, including the incidence of several chronic diseases, access to care, smoking, teen births, and a number of social factors.

### Virginia Department of Health

The Virginia Department of Health maintains a data warehouse that includes city or county-level indicators regarding mortality (**Exhibits 22** and **23**), cancer incidence (**Exhibit 24**), communicable diseases (**Exhibit 25**), and maternal and child health (**Exhibit 26**). Cells are shaded if the statistic is at all worse than Virginia averages, but does not indicate a statistically significant difference.

**Exhibit 22** provides age-adjusted mortality rates for selected causes of death in 2013.

**Exhibit 22: Selected Causes of Death, Age-Adjusted Rates per 100,000 Population, 2013**

| Age Adjusted Mortality Rates | Fairfax County | Loudoun County | Prince William County | Virginia |
|---|---|---|---|---|
| Total Deaths | 492.9 | 515.0 | 608.0 | **720.1** |
| Cancer | 117.4 | 123.5 | 135.7 | **161.3** |
| Heart Disease | 102.2 | 117.0 | 126.8 | **155.9** |
| Cerebrovascular Diseases (Stroke) | 26.0 | 29.8 | 27.2 | **38.5** |
| Chronic Lower Respiratory Diseases | 19.9 | 20.7 | 32.3 | **37.2** |
| Unintentional Injury | 20.6 | 22.2 | 26.1 | **33.0** |
| Alzheimer's Disease | 12.4 | 12.8 | 12.9 | **19.6** |
| Diabetes | 10.8 | 12.7 | 16.4 | **18.3** |
| Nephritis and Nephrosis | 11.6 | 11.3 | 9.6 | **18.0** |
| Septicemia | 12.0 | 3.1 | 11.4 | **17.7** |
| Influenza and Pneumonia | 12.5 | 11.6 | 20.2 | **16.8** |
| Suicide | 10.0 | 9.6 | 9.8 | **12.2** |
| Chronic Liver Disease | 4.2 | 3.8 | 5.1 | **8.9** |
| Primary Hypertension and Renal Disease | 6.2 | 7.3 | 6.8 | **7.2** |

Source: Virginia Department of Health, 2013.

With few exceptions (including influenza and pneumonia in Prince William and primary hypertension and renal disease in Loudoun), age-adjusted mortality rates in the community have been below Virginia averages.

**Exhibit 23: Cancer Deaths, Age-Adjusted Rates per 100,000 Population, 2008-2012**

| Mortality Rate | Fairfax County | Loudoun County | Prince William County | Virginia |
|---|---|---|---|---|
| All Cancers | 131.7 | 140.3 | 155.7 | **171.2** |
| Breast | 20.3 | 19.2 | 22.7 | **22.7** |
| Cervical | 1.4 | 1.8 | 2.1 | **1.9** |
| Colorectal | 11.5 | 14.2 | 13.3 | **14.9** |
| Lung and Bronchus | 28.0 | 35.2 | 43.3 | **48.2** |
| Melanoma | 2.6 | 2.2 | 2.3 | **2.9** |
| Oral Cavity | 1.2 | 1.7 | 2.5 | **2.3** |
| Ovarian | 7.7 | 7.4 | 5.7 | **7.9** |
| Prostate | 16.9 | 21.3 | 22.1 | **22.4** |

Source: Virginia Department of Health, 2012.

Similarly, cancer mortality rates have generally been below Virginia averages on an age-adjusted basis.

**Exhibit 24** presents age-adjusted cancer incidence rates in the community.

**Exhibit 24: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2008-2012**

| Incidence Rate | Fairfax County | Loudoun County | Prince William County | Virginia |
|---|---|---|---|---|
| All Cancers | 381.8 | 364.9 | 373.7 | **429.1** |
| Breast | 125.9 | 123.4 | 111.4 | **124.6** |
| Prostate | 109.1 | 105.3 | 110.2 | **126.3** |
| Lung and Bronchus | 41.0 | 44.2 | 52.1 | **63.6** |
| Colorectal | 33.2 | 32.3 | 33.7 | **38.3** |
| Melanoma | 13.2 | 12.9 | 10.1 | **18.3** |
| Ovarian | 13.3 | 13.5 | 11.4 | **11.8** |
| Pancreas | 10.1 | 7.9 | 8.2 | **10.4** |
| Cervical | 5.9 | 4.2 | 5.0 | **6.3** |

Source: National Cancer Institute and Centers for Disease Control and Prevention, 2012.

The incidence rates of breast cancer in Fairfax and ovarian cancer in Fairfax and Loudoun were higher than the Virginia averages in the 2008 through 2012 time period.

**Exhibit 25: Communicable Disease Incidence per 100,000 Population, 2014**

| Diagnoses | Fairfax County | Loudoun County | Prince William County | Virginia |
|---|---|---|---|---|
| HIV | 15.0 | 3.9 | 9.2 | **13.4** |
| Chlamydia | 210.6 | 179.9 | 354.6 | **438.0** |
| Gonorrhea | 27.0 | 18.1 | 40.7 | **100.8** |
| Early Syphilis | 3.6 | 2.4 | 7.4 | **6.8** |
| E. coli | 1.1 | 2.1 | 0.6 | **1.2** |
| Lyme Disease | 19.6 | 54.0 | 6.8 | **14.1** |
| Salmonellosis | 11.8 | 15.1 | 9.7 | **12.7** |
| Tuberculosis | 4.8 | 3.0 | 3.3 | **2.2** |

Source: Virginia Department of Health, 2014.

Fairfax County has higher HIV, Lyme disease, and tuberculosis incidence rates than Virginia. Loudoun County has a higher incidence of E. coli, Lyme disease, and salmonella compared to Virginia and other counties, and a higher than average rate of tuberculosis. Syphilis and tuberculosis rates have been above average in Prince William County.

**Exhibit 26: Maternal and Child Health Indicators, 2013**

| Measure | Fairfax County | Loudoun County | Prince William County | Virginia |
|---|---|---|---|---|
| Birth Rate (per 1,000 population) | 13.1 | 14.3 | 15.5 | **12.3** |
| Teen Pregnancy Rate (age 10-19) | 6.1 | 4.6 | 12.9 | **14.4** |
| < 15 years | 0.2 | 0.1 | 0.3 | **0.3** |
| 15-17 years | 5.9 | 3.3 | 9.8 | **11.3** |
| 18-19 years | 22.9 | 25.7 | 60.1 | **50.4** |
| Low Weight Births (%) | 7.2 | 5.9 | 6.8 | **8.0** |
| First Trimester Care (%) | 80.3 | 88.4 | 80.0 | **82.9** |
| Non-Marital Births (%) | 21.1 | 15.7 | 29.7 | **34.6** |
| Infant Mortality Rate | 4.0 | 4.4 | 6.1 | **6.2** |

Source: Virginia Department of Health, 2013.

**Exhibit 26** indicates that first trimester care may be problematic for some women in Fairfax and Prince William. The data also indicate that births among 18 to 19 year olds in Prince William was higher than the Virginia average.

### Behavioral Risk Factor Surveillance System

The Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) gathers data through a telephone survey regarding health risk behaviors, healthcare access, and preventive health measures. Data are collected for the entire United

States. Analysis of BRFSS data can identify local health issues, trends and health disparities, and can enable county, state, or nation-wide comparisons.

BRFSS data were assessed for Fairfax, Loudoun, and Prince William Counties and compared with Virginia averages. Only one indicator was found to be unfavorable on a statistically significant basis: binge drinking in Fairfax County.

In addition to asking questions about respondent health, the BRFSS gathers certain demographic data such as respondent age, education level achieved, household income, gender, and race/ethnicity. Unfortunately, BRFSS data available for Fairfax, Loudoun, and Prince William Counties are based on sample sizes too small to analyze local responses by demographic cohort. BRFSS data for these demographic cohorts are available for the entire Commonwealth, and those data show the following:

- Results by age range:
    - According to the Virginia BRFSS data, uninsurance rates tend to fall as individuals age. Rates are lowest for Medicare-eligible individuals (65 years of age and older).
    - The prevalence of chronic disease tends to increase as individuals age.
    - Across age groups, 14 to 20 percent of Virginians have been told they have some form of depression. Rates overall average 16 percent, and are highest for those between 44 and 65 years of age.
    - Smoking is most prevalent for those aged 25 to 34 years. Inability to see a doctor due to cost also is most prevalent within this group.
    - Binge drinking rates are highest for those aged 18 to 24 years and appear to decline with age.
- Results by level of educational achievement: uninsurance rates, chronic disease prevalence, smoking rates, depression rates, and the percentage of respondents unable to see a doctor due to cost are highest within cohorts with the lowest levels of educational achievement (those without high school diplomas and with no post-high school education).
- Results by level of household income:
    - Not surprisingly, households with the lowest incomes also have the highest rates of uninsurance, chronic disease, depression, smoking, and problems seeing a doctor due to cost.
    - Binge drinking rates are highest in households with the highest incomes.

- Results by gender: compared to males, females report higher levels of disability (e.g., difficulty walking or climbing stairs), higher cancer rates, and higher rates of depression. Males report slightly higher rates of angina or coronary heart disease than females.

- Results by race/ethnicity:

    - BRFSS data indicate that Hispanics have the highest uninsurance rate and are least able to see a doctor due to cost.

    - Disabilities appear to be most prevalent within Virginia's Black populations (e.g., difficulties with activities of daily living). Black individuals also appear to have the highest rates of smoking, high blood pressure, asthma, and diabetes.

    - Binge drinking appears to be most prevalent within White populations.

### Youth Risk Behavior Data

Fairfax County surveyed youth in public schools. The surveys asked questions similar to those raised by the CDC's Youth Risk Behavior Surveillance System (YRBSS).

**Exhibit 27** presents data for Fairfax, with comparisons to Virginia and the U.S. Cells are shaded if the value is at all worse than Virginia averages, with darker shading indicating the value is more than 25% worse than Virginia.

**Exhibit 27: Fairfax YRBS Data**

| Measure | Overall | | |
|---|---|---|---|
| | Fairfax | Virginia | U.S. |
| **Bullying** | | | |
| Prevalence of Having Been Cyberbullied in the Past Year | 15.8% | 14.5% | 14.8% |
| **Drug/Alcohol Use** | | | |
| Lifetime Prevalence of Alcohol Use | 41.1% | 55.3% | 66.2% |
| Lifetime Prevalence of Marijuana Use | 21.0% | 32.1% | 40.7% |
| Lifetime Prevalence of Smoking Cigarettes | 17.5% | 35.5% | 41.1% |
| Past Month Prevalence of Alcohol Use | 19.3% | 27.3% | 34.9% |
| Past Month Prevalence of Smoking Cigarettes | 5.3% | 11.1% | 15.7% |
| Percentage of Students Reporting First Use of Alcohol Before Age 13 | 12.3% | 18.2% | 18.6% |
| Percentage of Students Reporting First Use of Cigarettes Before Age 13 | 5.9% | 7.9% | 9.3% |
| Percentage of Students Reporting First Use of Marijuana Before Age 13 | 2.2% | 7.5% | 8.6% |
| **Physical and Mental Health** | | | |
| Percentage of Students Who Felt Sad or Hopeless in the Past Year | 29.6% | 25.7% | 29.9% |
| Prevalence of Drinking Soda or Pop At Least One Time Per Day in the Past Week | 13.0% | 21.7% | 27.0% |
| Prevalence of Physical Activity on Five or More Days in the Past Week | 39.9% | 44.3% | 47.3% |

Source: Fairfax County, 2015.

The Fairfax data indicate a higher prevalence of depression and lower rates of physical activity compared to Virginia averages. The occurrence of cyberbullying is also higher than in Virginia.

Additional Fairfax data indicate that depression and physical inactivity rates are higher for 12th grade students than for 8th and 10th graders. These issues also are more prevalent within racial and ethnic minorities (Black/African American, Asian, and Hispanic students). Female students in Fairfax County are much more likely than male students to report feeling so sad or hopeless (for two or more weeks in a row in the past year) that they stopped doing some usual activities.

## Ambulatory Care Sensitive Conditions

This section examines the frequency of discharges for Ambulatory Care Sensitive Conditions (ACSCs, frequently referred to as Prevention Quality Indicators or PQIs) throughout the community.

ACSCs are eighteen health "conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."[8] As such, rates of hospitalization for these conditions can "provide insight into the quality of the health care system outside of the hospital," including the accessibility and utilization of primary care, preventive care and health education. Among these conditions are: diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

Disproportionately high rates of discharges for ACSC indicate potential problems with the availability or accessibility of ambulatory care and preventive services and can suggest areas for improvement in the health care system and ways to improve outcomes. In Exhibits 28 and 29, cells are shaded if the value is at all worse than Virginia averages, with darker shading indicating the value is more than 25% worse than Virginia.

**Exhibit 28** provides risk adjusted, 2012 PQI rates (per 100,000 persons) for Fairfax, Loudoun, and Prince William Counties – with comparisons to Virginia averages.

[8] Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.

## Exhibit 28: PQI (ACSC) Risk Adjusted Rates per 100,000, 2012

| Prevention Quality Indicators Risk Adjusted Rate per 100,000 Population | Fairfax County | Loudoun County | Prince William County | Virginia |
|---|---|---|---|---|
| Chronic Obstructive Pulmonary Disease or Asthma in Older Adults | 173.2 | 175.7 | 289.5 | **406.8** |
| Heart failure admission rate | 159.0 | 215.3 | 290.4 | **322.2** |
| Percutaneous coronary angioplasty rate | 116.1 | 185.2 | 209.7 | **274.3** |
| Laminectomy rate | 167.3 | 178.6 | 222.4 | **239.0** |
| Bacterial pneumonia admission rate | 118.1 | 186.5 | 162.4 | **227.2** |
| Urinary tract infection admission rate | 124.5 | 126.3 | 130.5 | **159.6** |
| Hysterectomy rate | 63.8 | 43.3 | 109.9 | **127.2** |
| Dehydration admission rate | 61.1 | 87.7 | 86.1 | **112.2** |
| Coronary artery bypass graft rate | 70.1 | 63.8 | 92.5 | **108.0** |
| Diabetes long-term complication admission rate | 41.9 | 47.5 | 70.1 | **100.6** |
| Diabetes short-term complication admission rate | 26.5 | 34.2 | 46.4 | **74.1** |
| Hypertension admission rate | 22.7 | 27.4 | 28.0 | **50.9** |
| Asthma in Younger Adults | 16.8 | 13.9 | 34.1 | **44.3** |
| Rate of lower-extremity amputation among patients with diabetes | 5.6 | 6.6 | 11.5 | **16.3** |
| Uncontrolled diabetes admission rate | 4.0 | 2.6 | 6.2 | **12.6** |
| Angina without procedure admission rate | 2.8 | 3.3 | 4.2 | **8.3** |
| Low birth weight rate | 5.7 | 4.5 | 5.5 | **6.5** |

Source: Virginia Department of Health, 2013.

The rates of admissions for ACSC were below Virginia averages for all PQI conditions.

**Exhibit 29** provides 2014 PQI data for Fairfax County and other areas in Northern Virginia. An additional analysis of PQI rates for the twenty lowest-income ZIP codes across the community served by Inova is also provided. Cells are highlighted if rates are above the average for Northern Virginia, with dark shading if rates are 50 percent or more above average.

## Exhibit 29: Unadjusted PQI (ACSC) Rates per 100,000, 2014

| Condition | Alexandria City | Arlington County | Fairfax County | Loudoun County | Prince William County | Northern Virginia | Low Income ZIP Codes |
|---|---|---|---|---|---|---|---|
| COPD in Older Adults | 312.5 | 166.2 | 187.2 | 185.6 | 274.9 | 208.7 | 288.2 |
| Heart Failure | 203.1 | 95.1 | 178.3 | 167.9 | 197.0 | 173.0 | 206.9 |
| Bacterial Pneumonia | 117.7 | 64.7 | 103.3 | 120.4 | 103.7 | 102.6 | 108.6 |
| Urinary Tract Infection | 148.4 | 67.4 | 108.6 | 107.8 | 103.1 | 105.9 | 119.8 |
| Dehydration | 72.1 | 34.2 | 49.8 | 61.5 | 52.2 | 51.7 | 56.8 |
| Long-term Diabetes Complications | 70.5 | 36.9 | 49.4 | 57.7 | 70.1 | 54.5 | 69.4 |
| Short-term Diabetes Complications | 57.2 | 30.4 | 37.6 | 38.3 | 60.0 | 42.4 | 61.6 |
| Hypertension | 44.8 | 10.9 | 30.0 | 16.4 | 23.5 | 25.9 | 39.9 |
| Perforated Appendix | 24.9 | 11.4 | 19.8 | 17.3 | 16.6 | 18.3 | 22.1 |
| Asthma in Younger Adults | 20.3 | 11.2 | 18.0 | 18.6 | 29.2 | 19.4 | 22.0 |
| Lower-Extremity Amputation due to Diabetes | 9.1 | 2.7 | 6.8 | 4.6 | 6.8 | 6.2 | 8.8 |
| Uncontrolled Diabetes | 9.9 | 3.3 | 2.8 | 2.5 | 4.9 | 3.7 | 5.3 |
| Angina | 4.1 | 0.5 | 3.3 | 2.5 | 4.2 | 3.1 | 2.8 |

Source: Analysis of 2014 discharge data using AHRQ software, 2016.

In **Exhibit 29**, Prince William County's PQI rates are above average for most conditions and are particularly high for asthma in younger adults. Fairfax County and Loudoun County rates are

generally around the region's average. Rates are higher for each condition except Angina within the lowest-income ZIP codes.

**Exhibit 30** provides the number of PQI cases for each Inova hospital.

**Exhibit 30: PQI Cases by Inova Hospital, 2014**

| Condition | Inova Alexandria Hospital | Inova Fairfax Hospital | Inova Fair Oaks Hospital | Inova Loudoun Hospital | Inova Mount Vernon Hospital |
|---|---|---|---|---|---|
| COPD in Older Adults | 403 | 370 | 182 | 209 | 185 |
| Heart Failure | 457 | 785 | 246 | 317 | 266 |
| Bacterial Pneumonia | 260 | 376 | 175 | 234 | 118 |
| Urinary Tract Infection | 337 | 387 | 199 | 203 | 120 |
| Dehydration | 178 | 149 | 88 | 115 | 72 |
| Long-term Diabetes Complications | 182 | 258 | 87 | 88 | 48 |
| Short-term Diabetes Complications | 127 | 114 | 74 | 77 | 58 |
| Hypertension | 143 | 95 | 36 | 35 | 60 |
| Perforated Appendix | 40 | 90 | 41 | 28 | 16 |
| Asthma in Younger Adults | 25 | 18 | 9 | 9 | 10 |
| Lower-Extremity Amputation due to Diabetes | 15 | 39 | 11 | 6 | 1 |
| Uncontrolled Diabetes | 17 | 17 | 3 | 5 | 3 |
| Angina | 11 | 9 | 7 | 5 | 6 |
| Low Birth Weight | 185 | 492 | 138 | 93 | - |
| PQI Discharges | 2,380 | 3,199 | 1,296 | 1,424 | 963 |
| Total Discharges | 19,356 | 50,880 | 16,524 | 13,811 | 8,626 |
| PQI / Total Discharges | 12.3% | 6.3% | 7.8% | 10.3% | 11.2% |

Source: Analysis of 2014 discharge data using AHRQ software, 2016.

About 6 percent of Inova Fairfax Medical Campus's discharges are for PQI conditions – the lowest proportion within Inova. These cases represent 12 percent of discharges for Inova Alexandria Hospital, 11 percent for Inova Mount Vernon Hospital, 10 percent for Inova Loudoun Hospital, and 8 percent for Inova Fair Oaks Hospital.

## Community Need Index™ and Food Deserts

### Dignity Health Community Need Index

Dignity Health, a California-based hospital system, developed and has made widely available for public use a *Community Need Index*™ that measures barriers to health care access by county/city and ZIP code. The index is based on five social and economic indicators:

- The percentage of elders, children, and single parents living in poverty;
- The percentage of adults over the age of 25 with limited English proficiency, and the percentage of the population that is non-White;
- The percentage of the population without a high school diploma;
- The percentage of uninsured and unemployed residents; and
- The percentage of the population renting houses.

The *Community Need Index*™ calculates a score for each ZIP code based on these indicators. Scores range from "Lowest Need" (1.0-1.7) to "Highest Need" (4.2-5.0).

**Exhibit 31** presents the *Community Need Index*™ (CNI) score of ZIP codes in the community by each county in the Inova Fairfax Medical Campus community, weighted by the CNI score and population of each.

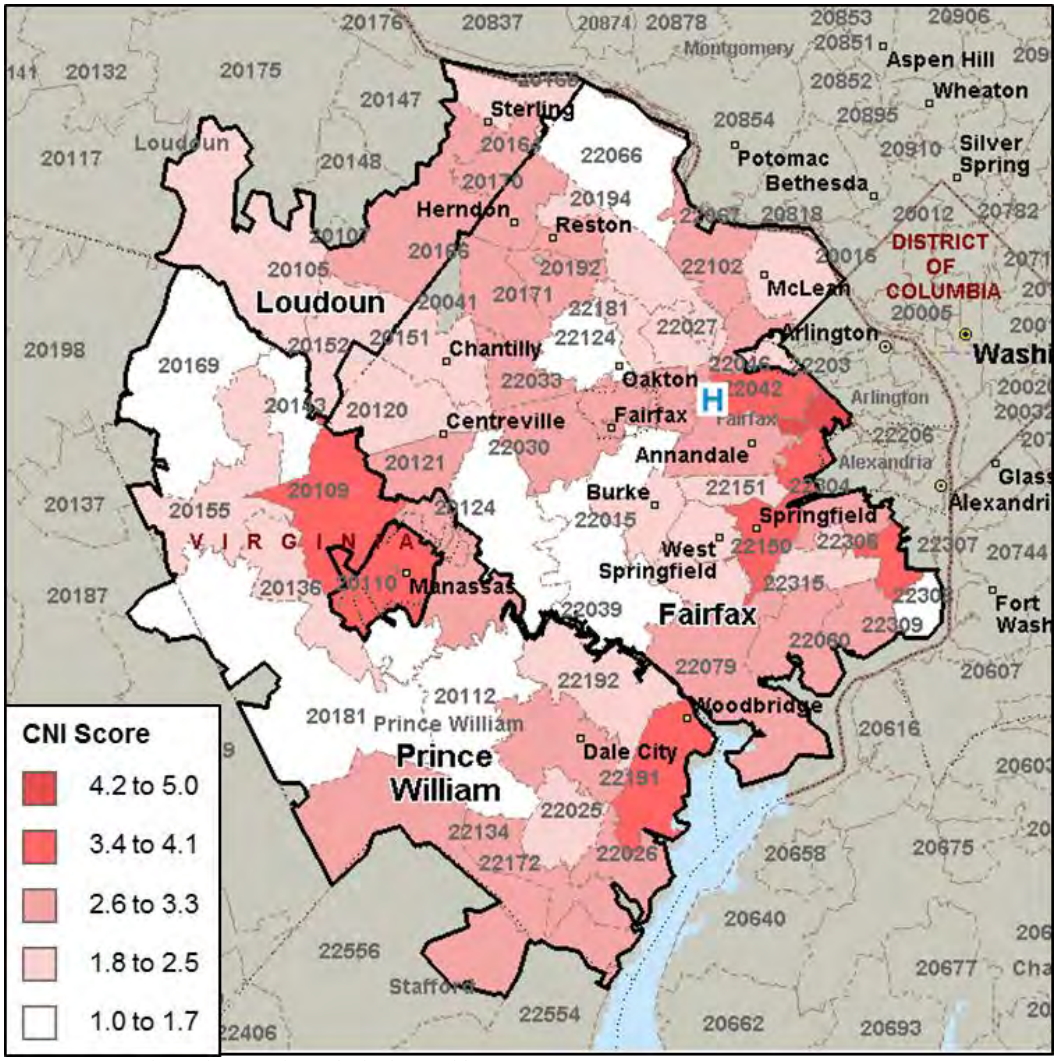
## Exhibit 31: Community Need Index™ Score by Jurisdictions in Service Area, 2015

| ZIP Code | County | Community | CNI Score |
|---|---|---|---|
| 22041 | Fairfax | Lincolnia/Bailey's Crossroads | 4.4 |
| 22150 | Fairfax | Springfield | 4 |
| 22306 | Fairfax | Mount Vernon South/Ft. Belvoir | 4 |
| 22044 | Fairfax | East Fairfax 29/50 Corridor | 4 |
| 22312 | Fairfax | Lincolnia/Bailey's Crossroads | 3.8 |
| 22042 | Fairfax | East Fairfax 29/50 Corridor | 3.6 |
| 22191 | Prince William | Woodbridge | 3.6 |
| 20109 | Prince William | Manassas West | 3.4 |
| 22309 | Fairfax | Mount Vernon South/Ft. Belvoir | 3.2 |
| 22003 | Fairfax | Annandale/North Springfield | 3.2 |
| 20111 | Prince William | Manassas East | 3.2 |
| 22172 | Prince William | Dale City/Dumfries/Quantico | 3.2 |
| 20170 | Fairfax | Reston/Herndon | 3 |
| 22031 | Fairfax | East Fairfax 29/50 Corridor | 3 |
| 22026 | Prince William | Dale City/Dumfries/Quantico | 3 |
| 22193 | Prince William | Dale City/Dumfries/Quantico | 3 |
| 20121 | Fairfax | Centreville | 2.8 |
| 20191 | Fairfax | Reston/Herndon | 2.8 |
| 22030 | Fairfax | Fairfax City | 2.8 |
| 22033 | Fairfax | Oakton/Fair Lakes/South Herndon | 2.8 |
| 22043 | Fairfax | West Falls Church | 2.8 |
| 22102 | Fairfax | McLean/Great Falls | 2.8 |
| 20164 | Loudoun | Sterling/Dulles | 2.8 |
| 20166 | Loudoun | Sterling/Dulles | 2.8 |
| 22310 | Fairfax | Franconia/Kingstowne | 2.6 |
| 22060 | Fairfax | Mount Vernon South/Ft. Belvoir | 2.6 |
| 22079 | Fairfax | Lorton/Newington | 2.6 |
| 20171 | Fairfax | Oakton/Fair Lakes/South Herndon | 2.6 |
| 20190 | Fairfax | Reston/Herndon | 2.6 |
| 22134 | Prince William | Dale City/Dumfries/Quantico | 2.6 |
| 22315 | Fairfax | Franconia/Kingstowne | 2.4 |
| 20120 | Fairfax | Centreville | 2.4 |
| 20151 | Fairfax | Chantilly | 2.4 |
| 22027 | Fairfax | Vienna | 2.4 |
| 22151 | Fairfax | Annandale/North Springfield | 2.4 |
| 22180 | Fairfax | Vienna | 2.4 |
| 22181 | Fairfax | Vienna | 2.4 |
| 22192 | Prince William | Lake Ridge/Occoquan | 2.4 |
| 20194 | Fairfax | Reston/Herndon | 2.2 |
| 22152 | Fairfax | Springfield | 2 |
| 22015 | Fairfax | GMU/Burke | 2 |
| 20165 | Loudoun | Sterling/Dulles | 2 |
| 22153 | Fairfax | Springfield | 1.8 |
| 22101 | Fairfax | McLean/Great Falls | 1.8 |
| 22182 | Fairfax | Vienna | 1.8 |
| 20105 | Loudoun | South Riding/Aldie | 1.8 |
| 20152 | Loudoun | South Riding/Aldie | 1.8 |
| 20136 | Prince William | Gainesville/Haymarket/Bull Run | 1.8 |
| 20155 | Prince William | Gainesville/Haymarket/Bull Run | 1.8 |
| 22025 | Prince William | Dale City/Dumfries/Quantico | 1.8 |
| 20124 | Fairfax | Clifton/Fairfax Station | 1.6 |
| 22032 | Fairfax | GMU/Burke | 1.6 |
| 22039 | Fairfax | Clifton/Fairfax Station | 1.6 |
| 22066 | Fairfax | McLean/Great Falls | 1.6 |
| 22124 | Fairfax | Oakton/Fair Lakes/South Herndon | 1.6 |
| 20112 | Prince William | Manassas East | 1.6 |
| 20143 | Prince William | Gainesville/Haymarket/Bull Run | 1.6 |
| 20169 | Prince William | Gainesville/Haymarket/Bull Run | 1.6 |
| 22308 | Fairfax | Mount Vernon South/Ft. Belvoir | 1.4 |
| 20181 | Prince William | Gainesville/Haymarket/Bull Run | 1.4 |
| **IFH Community Average** | | | **2.7** |
| **Fairfax County Average** | | | **2.7** |
| **Loudoun County Average** | | | **2.2** |
| **Prince William County Average** | | | **2.6** |

Source: Dignity Health, 2015.

**Exhibit 32** presents these data in a community map format.

**Exhibit 32: Community Need Index, 2015**




Source: Microsoft MapPoint and Dignity Health, 2015.

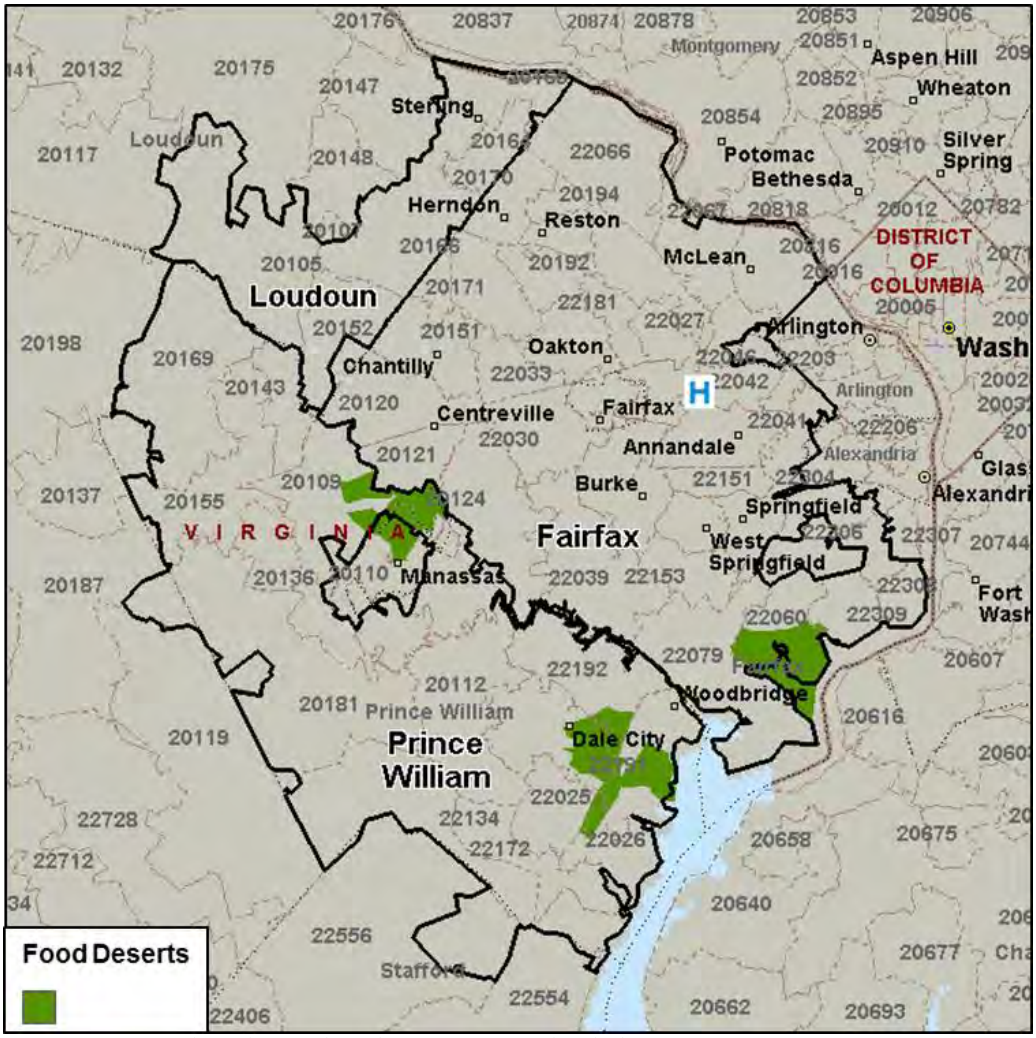
The CNI indicates that highest need areas are in Fairfax County ZIP codes 22041, 22150, 22306, and 22044. These ZIP codes each have a 2015 CNI score of 4.0 or higher.

### Food Deserts

The U.S. Department of Agriculture's Economic Research Service estimates the number of people in each census tract that live in a "food desert," defined as low-income areas more than one mile from a supermarket or large grocery store in urban areas and more than 10 miles from a supermarket or large grocery store in rural areas. Many government-led initiatives aim to increase the availability of nutritious and affordable foods to people living in these food deserts.

**Exhibit 33** illustrates the location of food deserts in the community.

**Exhibit 33: Food Deserts**



Source: Microsoft MapPoint and U.S. Department of Agriculture, 2015.

The food deserts in the community are located in Mount Vernon South/Fort Belvoir, Dale City/Woodbridge, and Manassas West.

## Medically Underserved Areas and Populations

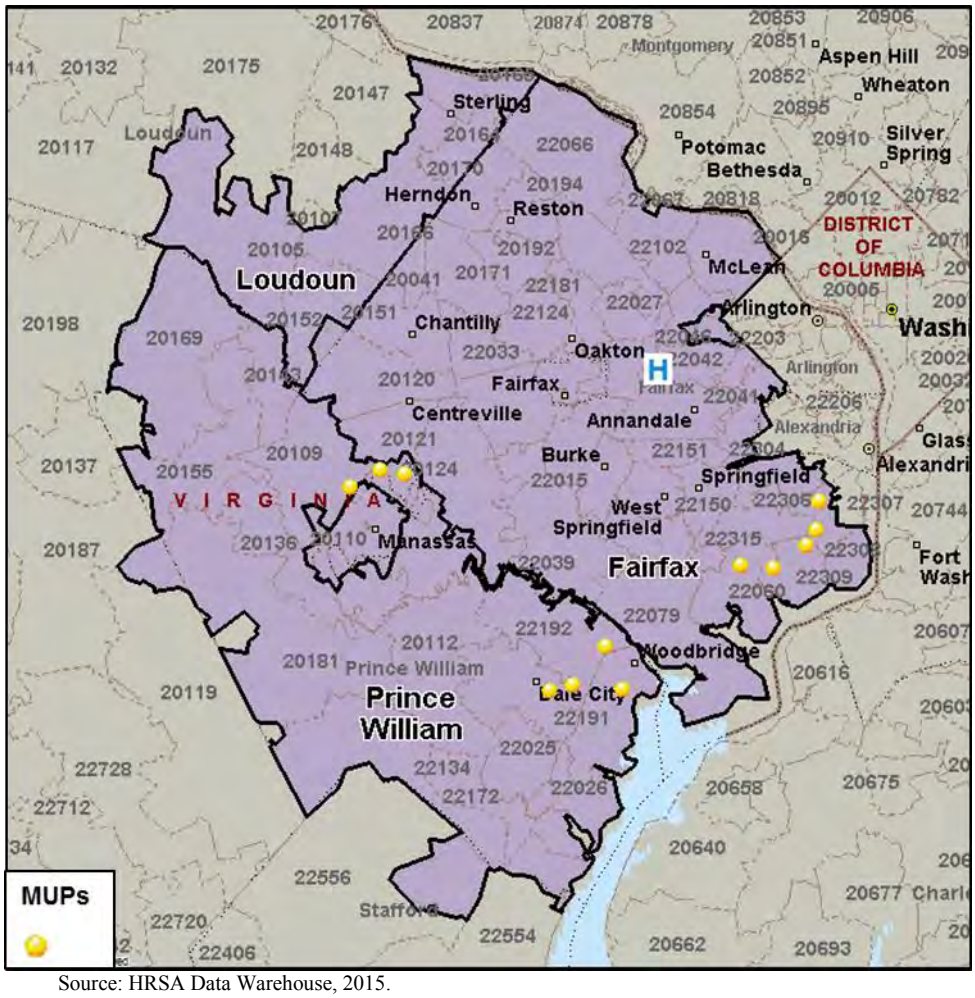
Medically Underserved Areas and Populations (MUA/Ps) are designated by the Health Resources and Services Administration (HRSA) based on an "Index of Medical Underservice." The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[9] Areas with a score of 62 or less are considered "medically underserved."

Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if "unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides."[10]

There are multiple census tracts within the hospital's community that have been designated as areas where Medically Underserved Populations are present (**Exhibit 34**). These areas fall primarily along the Richmond Highway corridor, Dale City, and Manassas West.

[9] Heath Resources and Services Administration. See http://www.hrsa.gov/shortage/mua/index.html
[10] *Ibid.*

**Exhibit 34: Medically Underserved Areas and Populations**




Source: HRSA Data Warehouse, 2015.

## Description of Other Facilities and Resources within the Community

### Federally Qualified Health Centers

Federally Qualified Health Centers (FQHCs) are established to promote access to ambulatory care in areas designated as "medically underserved." These clinics receive enhanced reimbursement for Medicaid and Medicare services and most also receive federal grant funds under Section 330 of the Public Health Service Act. There currently are three FQHC organizations operating multiple sites in Northern Virginia (**Exhibit 35**).

## Exhibit 35: Federally Qualified Health Centers

| Facility | County | ZIP Code | Address |
|---|---|---|---|
| Neighborhood Health King Street Dental | Alexandria City | 22302 | 4480 King St |
| Neighborhood Health at the Casey Clinic | Alexandria City | 22304 | 1200 N Howard St |
| Neighborhood Health at Alexandria CSB | Alexandria City | 22314 | 720 N Saint Asaph St |
| Neighborhood Health at 2 East | Alexandria City | 22305 | 2 E Glebe Rd |
| Neighborhood Health at the WOW Bus | Alexandria City | 22305 | 2 E Glebe Rd |
| Neighborhood Health at Richmond Highway | Fairfax | 22306 | 6677 Richmond Hwy |
| Loudoun Community Health Center- Healthworks of Northern Virginia | Loudoun | 20176 | 163 Fort Evans Rd Ne |
| Loudoun Community Health Center- Healthworks of Northern Virginia | Fairfax | 20170 | 1141 Elden St Ste |
| Greater Prince William Community Health Center- Dumfries | Prince William | 22026 | 17739 Main St |
| Greater Prince William Community Health Center- Ridgewood | Prince William | 22192 | 4379 Ridgewood Center Dr |
| Greater Prince William Community Health Center- Evergreen Terrace | City of Manassas | 20110 | 9705 Liberia Ave |

Source: Health Resources and Services Administration, 2016.

### Other Clinics for Lower-Income Individuals

In addition to the FQHCs, there are other clinics in the area that serve lower-income individuals. These include the Arlington Free Clinic (Arlington, VA), the Culmore Clinic (Falls Church, VA) and three Community Health Care Network (CHCN) sites currently operated by Fairfax County (Merrifield – ZIP code 22031, South County – ZIP code 22309, and North County – ZIP code 20190). The Culmore Clinic and all three CHCN sites are located in the community served by Inova Fairfax Medical Campus.

In addition to these resources, Inova operates several InovaCares Clinic sites across Northern Virginia. The Fairfax County Health Department also provides an array of services at locations throughout the jurisdiction.

### Hospitals

**Exhibit 36** presents information on hospital facilities that operate in the community.

**Exhibit 36: Hospitals**

| Facilty | Facility Type | Number of Beds | ZIP Code | City |
|---|---|---|---|---|
| Dominion Hospital | Psychiatric | 100 | 22044 | Falls Church |
| Fairfax Surgical Center | Ambulatory Surgical | - | 22030 | Fairfax |
| Haymarket Medical Center | Acute | 60 | 20169 | Haymarket |
| HealthSouth Rehab Hospital of Northern Virginia | Rehabilitation | 55 | 20105 | Aldie |
| Inova Alexandria Hospital | Acute | 318 | 22304 | Alexandria |
| Inova Fair Oaks Hospital | Acute | 182 | 22033 | Fairfax |
| Inova Fairfax Hospital | Acute | 833 | 22042 | Falls Church |
| Inova Loudoun Ambulatory Surgery Center | Ambulatory Surgical | - | 20176 | Leesburg |
| Inova Loudoun Hospital | Acute | 183 | 20176 | Leesburg |
| Inova Mount Vernon Hospital | Acute | 237 | 22306 | Alexandria |
| Inova Surgery Center at Franconia-Springfield | Ambulatory Surgical | - | 22310 | Alexandria |
| Kaiser Permanente Tysons Corner Surgey Center | Ambulatory Surgical | - | 22102 | McLean |
| North Spring Behavioral Healthcare | Psychiatric | - | 20176 | Leesburg |
| Northern Virginia Eye Surgery Center, LLC | Ambulatory Surgical | - | 22031 | Fairfax |
| Northern Virginia Surgery Center | Ambulatory Surgical | - | 22033 | Fairfax |
| Novant Health Prince William Medical Center | Acute | 130 | 20110 | Manassas |
| Prince William Ambulatory Surgery Center | Ambulatory Surgical | - | 20110 | Manassas |
| Reston Hospital Center | Acute | 187 | 20190 | Reston |
| Reston Surgery Center | Ambulatory Surgical | - | 20190 | Reston |
| Sentara Northern Virginia Medical Center | Acute | 183 | 22191 | Woodbridge |
| Skin Cancer Outpatient Surgical Hospital | Ambulatory Surgical | - | 22182 | Vienna |
| Virginia Hospital Center | Acute | 342 | 22205 | Arlington |

Source: Virginia Health Information, 2016.

### Other Community Resources

There is a wide range of agencies, coalitions, and organizations available in the region served by Inova Fairfax Medical Campus. 2-1-1 Virginia maintains a large database to help refer individuals in need to health and human services in the Commonwealth. This is a service of the Virginia Department of Social Services and is provided in partnership with the Council of Community Services, The Planning Council, and United Way chapters in the Commonwealth.

**Exhibit 37** identifies the number of agencies with information available at 2-1-1 Virginia, by city and county and by type of service provided.

**Exhibit 37: Other Community Resources**

| Category | Fairfax County | Loudoun County | Prince William County |
|---|---|---|---|
| Health Care | 67 | 62 | 69 |
| Food | 23 | 21 | 21 |
| Housing | 16 | 14 | 15 |
| Mental Health | 226 | 223 | 226 |
| Substance Abuse Treatment | 19 | 18 | 19 |
| Assisted Living | 118 | 114 | 110 |
| Dental Care | 27 | 24 | 29 |
| Legal Advice/Representation | 47 | 46 | 43 |
| Financial Aid | 38 | 35 | 36 |
| Environment | 24 | 25 | 26 |

Source: 2-1-1 Virginia.

Additional information about these resources is available at:
http://211virginia.org/consite/index.php

## Findings of Other Community Health Needs Assessments

Eight other needs assessments and health reports relevant to the Inova Fairfax Medical Campus community were also reviewed. These reports are as follows:

- Virginia Department of Health's *Virginia Health Equity Report*
- Northern Virginia Health Foundation's *How Healthy is Northern Virginia?*
- NoVAHealthFORCE's *The State of the Healthcare Workforce of Northern Virginia*
- Virginia Hospital Center's *Community Health Needs Assessment*
- Fairfax County's *Community Health Improvement Plan*
- Novant Health's Prince William Medical Center *Community Health Needs Assessment*
- Prince William Coalition for Human Services' *Community Health Needs Assessment*
- Sentara Northern Virginia Medical Center's *Community Health Needs Assessment*

**Virginia Health Equity Report**
In 2012, the Virginia Department of Health published the *Virginia Health Equity Report* to assess the presence of health disparities and health equity issues across the Commonwealth.

Key findings of the report include the following:

- Virginia's fastest growing population is Hispanic, rising 47.8 percent from 2000-2009
- Blacks, Hispanics, and American Indians are disproportionally represented within the 13 percent of Virginians (older than 25) who have not earned a high school diploma
- Compared to Whites, Blacks were 2.4 times more likely to live in poverty, Hispanics were 1.9 times more likely, and American Indians 3 times more likely

- All other racial groups are more likely to be uninsured than Whites, with Hispanics the most likely to be uninsured (2.4 times more likely than Whites)
- Blacks and Hispanics were significantly more likely to say their neighborhood was unsafe compared to Whites, and almost twice as many respondents who reported their neighborhood as unsafe had poor health status (20.3 vs. 11.7 percent)
- 24.6 percent of Blacks reported experiences of perceived racial discrimination, nearly 5 times higher than rates among Whites
- Those who reported experiences of racial discrimination were more than twice as likely to be unhealthy than those who did not and almost 3 times more likely to report mentally unhealthy days
- As well as having poorer health, socioeconomically disadvantaged and racial/ethnic minority populations appear to have higher death rates and shorter life expectancy
- For all 14 leading causes of death in Virginia, those with the lowest education levels have higher rates of death than those with the highest levels of educational achievement
- Black males are expected to live 5 years shorter than Whites and Black females 3 years shorter than White females
- Heart disease, cancer, and cerebrovascular disease/stroke account for two-thirds of all deaths for Whites and Blacks, with mortality rates for Blacks 30 percent greater for these causes than rates for Whites
- Racial inequities are more concentrated in metropolitan areas
- The annual direct costs of health inequities among disadvantaged populations account for billions of dollars
- Black Virginians are 3.7 times more likely to live in a low Health Opportunity Index (HOI) area than Whites; Whites are 4.2 times more likely to live in a high HOI area
- Hispanics are more likely to live in low HOI areas and less likely in high HOI areas
- These HOI variances are even more pronounced in urban areas
- While Northern Virginia and Fairfax are generally defined as high HOI areas, multiple tracts of low health opportunity can be found
- The infant mortality rate is 7.2 per 1,000 live births in Virginia, but 4.5 for Whites and 12.9 for Blacks
- Virginians with the least educational attainment have a death rate 2.7 times higher than those with more than 12 years of education (1.3 times higher than those with 12 years)

**Northern Virginia Health Foundation**

The Northern Virginia Health Foundation published its report, *How Healthy is Northern Virginia?* which contains community health indicators for the region.

Findings include the following:

- 9 of the 10 regions of Northern Virginia are ranked in the top 16 in health outcomes for all Virginia cities and counties. However, the City of Fairfax is an outlier at 55
- While based on a small sample size, the City of Fairfax has a mortality ranking of 97 due to a relatively high premature death rate
- Northern Virginia had higher rates of births with late prenatal care than Virginia

- Compared to the Commonwealth as a whole, cancer rates are generally lower in Northern Virginia, with exceptions being breast cancer in the Fairfax Health District and melanoma in the Loudoun Health District
- Rates of HIV diagnosis were higher in Alexandria (27.7 per 100,000) and Arlington (17.1) than Virginia (11.3); and tuberculosis rates were comparatively high throughout the region
- The City of Manassas (1,060.8) and City of Fairfax (876.1) had higher rates of behavioral health discharges than Virginia (786.8)
- 20 percent of adults in the region are at risk for binge drinking, 2 percent higher than the state average
- Over 50 percent of K-12 students in the cities of Alexandria, Manassas, and Manassas Park are eligible for free or reduced lunch
- Approximately 175,000 Northern Virginians live in 49 census tracts that are ranked in the bottom 20 percent statewide for Health Opportunity Index

**The State of the Health Care Workforce in Northern Virginia**
This report, published in 2014 by NoVAHealthFORCE, aimed to identify the shift that had occurred in the regional health care landscape and the job patterns that accompanied this shift. The report covered Arlington, Fairfax, Prince William and Loudoun Counties and the Cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park.

- While a projected shortage of nurses was expected to last through 2020, employers report a sufficient supply of registered nursing candidates
- The area's population has grown 22% in the past decade; minorities currently comprise 31% of the population – a statistic expected to rise to 41% by 2020
- Population and employment opportunities are projected to grow most rapidly in Prince William and Loudoun counties
- Health care job growth is expected particularly in Prince William and Loudoun counties as the population aged 65 plus is expected to increase by 42 percent; an estimated 5,600 new jobs will be needed

**Virginia Hospital Center CHNA**
This community health assessment, published in 2014, assessed the Virginia Hospital Center's community, which includes 28 ZIP codes in Arlington and Fairfax Counties and the City of Alexandria. A survey of key informants was conducted to identify the most important community health concerns and gaps.

- Most important community health concerns, by survey response, are as follows: mental health conditions (other than depression) (81%), depression (77%), adult obesity (69%), diabetes (65%), substance abuse-illegal drugs (65%), alcohol use (62%), dental care (62%), childhood obesity (58%), substance abuse- prescription drugs (58%)
- Important community service gaps (by survey response rate): behavioral health services (88%), health care services for uninsured and underinsured (68%), aging services (56%), dental care (56%), and health care insurance coverage (56%)
- Age 65+ population expected to grow 17% from 2013-2018 and Hispanic population expected to grow 11%

- Births without prenatal care in the first 13 weeks of pregnancy comprise 17% of all live births in region, compared to 13% across Virginia
- Arlington (4.1), Fairfax (4.8), and Alexandria (4.4) all have lower five-year average infant mortality rate per 1,000 live births than Virginia (6.7)
- 19% of area at risk for binge drinking; 17% are smokers
- 36% have high cholesterol and 29% have high blood pressure
- 22% have arthritis, 9% have asthma, and 8% have diabetes
- In describing health status, 17% of respondents stated they had "fair or poor" health; additionally, 17% of population responded that they are limited in activities because of physical, mental, or emotional problems
- 15% of adults and 6% of children in the area are uninsured

**Fairfax County Community Health Improvement Plan, 2013-2018**
This report was published in 2013 as a product of the Fairfax County Health Department and the Partnership for a Healthier Fairfax, a diverse coalition of citizens and business organizations.

The priority issues of the report were as follows:

- Improve the community environment to promote good health
    - Identified a need for health considerations in urban planning, development, and transportation, as well as identifying the environmental impacts and health impacts that urbanization bring
- Increase opportunities for physical health to promote active living
    - The rising rates of obesity among youth and adults necessitates this goal
- Make healthy food affordable and accessible
- Reduce tobacco use and exposure to secondhand smoke
- Expand the health workforce to meet the needs of the community
    - The current health workforce is aging
    - There is also an increasing demand for primary and specialty care providers
    - The community believes there is a lack of racial and ethnic diversity among its providers, making it difficult for certain groups to find adequate care
- Improve access and quality of health care services
    - There are many challenges in navigating the complex system of services, so more information is needed
- Integrate public health data to improve monitoring, analysis, reporting and evaluation of community health
    - Current data is abundant, but fragmented, necessitating more coordination and monitoring of health disparities and outcomes in the community

**Prince William Medical Center Community Health Needs Assessment**
Novant Health is a not-for-profit health system that consists of 15 hospitals across North Carolina, Virginia, and South Carolina. Their Prince William Medical Center is an acute care hospital, established in 1964, that has been part of Novant Health since 2009. The service area for the hospital includes Prince William County, Manassas City, Manassas Park City, and parts of Fauquier County.

This 2013 report concluded the following:

- The Greater Prince William area has twice as many foreign-born residents who speak another language than English and three times as many people of Hispanic origin as Virginia.
- The area has a higher percentage of children under the age of 18 and a lower percentage of people over 65 than the Commonwealth.
- In 2012, the top reasons for emergency department hospitalizations at the hospital were as follows:
    - Pneumonia (296 cases)
    - Alcohol withdrawal (240 cases)
    - Septicemia (180 cases)
    - Urinary tract infection (143 cases)
    - Acute kidney failure (141 cases)
    - Episodic mood disorders (141 cases)
- The prioritized health needs of the Greater Prince William area were as follows (in order, 1 through 10):
    - Cancer
    - Heart disease
    - Unintentional injury
    - Brain disease
    - Chronic lower respiratory disease
    - Diabetes mellitus
    - Septicemia
    - Nephritis and nephrosis
    - Influenza and pneumonia
    - Suicide
- The top ten needs of Fauquier County are:
    - Adult obesity
    - Mental illness
    - Diabetes
    - Childhood obesity
    - Alcohol use
    - Heart disease and stroke
    - Substance abuse (illegal drugs)
    - Dental care and oral health
    - Substance abuse (prescription drugs)
    - Alzheimer's disease

**Prince William Coalition for Human Services Community Health Needs Assessment**
This 2013 report focused on the Greater Prince William area, including Prince William County and the cities of Manassas and Manassas Park.

The report concluded:

- While county rankings are in top 15, rankings in general dropped since the last Prince William Needs Report published (they attribute this to economic recession, possibly, and the aging and increasingly diverse population)

- County rank for high school graduation rate fell from 75 to 88% between 2011-12 for Prince William County
- Diabetes death rate (per 1,000) increased from 12.2 to 18.3 from 2010-11
- Still very low health literacy, which leads to a lot of treatment for preventable illnesses and confusion about next steps after seeing a physician
- Prince William has a relatively high percent of uninsured adults, and additional issues with access to care caused by lack of health literacy, transportation needs and fewer primary care physicians
- There are long waiting lists for mental health services, including counseling, care coordination, case management, and treatment of serious mental illnesses
- Ongoing issues with support services, such as housing, employment, and transportation, exist for those with disabilities
- From FY2010 to FY2012, the number of people with intellectual disabilities on the waiting list for day support services grew from 22 to 62
- The youth population increases by over 2,000 people a year and many are without parental guidance after school, so developing and sustaining youth activities is needed
- Physical space for activities is limited
- There is a deficit of 8,220 housing units for those who make less than $27,770 annually
- The percent of children receiving free/reduced lunch has been increasing (32% in 2008, 37% in 2012)
- Crime statistics have been decreasing steadily from 2005 to 2012

**Sentara Northern Virginia Medical Center Community Health Needs Assessment**
The 2013 needs assessment by Sentara Northern Virginia examined parts of Fairfax County, Prince William County, and Stafford County and found the following:

- The most important (more than 50% respondents mention) community health concerns identified by survey respondents were: adult obesity (78%), childhood obesity (70%), diabetes (69%), high blood pressure (64%), mental health conditions other than depression (62%), dental care/oral health (56%), depression (52%) and cancer (49%)
- The most important community service gaps identified by survey respondents were: behavioral health services (94%), health care services for uninsured/underinsured (66%), dental (58%), homeless services (51%) and aging services (51%)
- Fairfax County had an infant mortality rate of 4.9 per 1,000 and Prince William a rate of 6.3 in 2011
- Estimated health risk factors for adults in the study area in 2012:
    - 21% smokers and 23% at risk for binge drinking
    - 35% had high cholesterol and 28% high blood pressure
    - 10% had asthma, 9% diabetes, and 21% arthritis
    - 16% of the population reported their health status as fair or poor
- 17% of adults and 7% of children were uninsured

# PRIMARY DATA ASSESSMENT

Community input (primary data) was gathered through the design and administration of a community survey and through key informant interviews. This section summarizes findings from this process.

## Community Survey Findings

In total, 2,232 surveys were received from communities served by all Inova hospitals, and 1,541 surveys were received from residents of the Inova Fairfax Medical Campus community.

It is important to note that the survey utilized a convenience sampling methodology, and not a random sampling approach, such as one carried out by dialing randomly selected phone numbers. For this reason, findings from the survey are not generalizable to or representative of community-wide opinion. Even with this consideration, results from the community survey have been included in this assessment because they may corroborate and supplement the other data sources, and may be helpful in identifying potential health disparities.

### Respondent Characteristics

Of the 1,541 surveys from the Inova Fairfax Medical Campus's community:

- Approximately 81 percent were female (1,178 respondents indicated their gender; 953 of these as female);
- 12 percent indicated they were Hispanic (or Latino);
- 9 percent indicated they were Black or African American; 79 percent were White/Caucasian;
- 32 percent indicated they were between 40 and 54 years of age; 24 percent were between 55 and 64 years of age; 23 percent 65 years of age or older;
- 8 percent indicated annual household income below $25,000; 11 percent between $25,00 and $49,999; 28 percent between $50,000 and $99,999; 27 percent between $100,000 and $149,999; 26 percent $150,000 and above; and
- 70 percent indicated they had private health insurance; 6 percent that they were uninsured.

### Results: Inova Fairfax Medical Campus Community Residents

**Exhibits 38 through 41** summarize survey responses from residents of the Inova Fairfax Medical Campus community.

**Exhibit 38**
**Question: What do you think are the most important health issues in your community/neighborhood? Check only 3.**

| Issue | Count | Percent Responded |
|---|---|---|
| Access to care | 445 | 28.9% |
| Mental health problems | 398 | 25.8% |
| Overweight/Obesity | 373 | 24.2% |
| Aging problems (e.g., arthritis, hearing/vision loss) | 320 | 20.8% |
| Housing that is adequate, safe and affordable | 313 | 20.3% |
| Lack of exercise | 223 | 14.5% |
| Cancers | 208 | 13.5% |
| Alcohol/Drug abuse | 205 | 13.3% |
| Heart disease and stroke | 171 | 11.1% |
| Diabetes | 156 | 10.1% |
| High blood pressure | 148 | 9.6% |
| Nutrition | 123 | 8.0% |
| Dental problems | 97 | 6.3% |
| Other (please specify) | 84 | 5.5% |
| Lyme Disease | 64 | 4.2% |
| Domestic Violence | 63 | 4.1% |
| Bullying | 57 | 3.7% |
| Suicide | 55 | 3.6% |
| Tobacco Use | 52 | 3.4% |
| Motor vehicle crash injuries | 48 | 3.1% |
| Child abuse/neglect | 36 | 2.3% |
| Teenage pregnancy | 36 | 2.3% |
| Infectious diseases (e.g., hepatitis, TB) | 31 | 2.0% |
| Respiratory/lung disease | 27 | 1.8% |
| Gun-related injuries | 23 | 1.5% |
| HIV/AIDS | 12 | 0.8% |
| Rape/sexual assault | 12 | 0.8% |
| Sexually transmitted diseases | 12 | 0.8% |
| Homicide | 7 | 0.5% |
| Infant death | 2 | 0.1% |

*Note: 13 responses were excluded due to respondents choosing more than 3 responses
Source: Inova Health System, 2016.

Over 20 percent of respondents indicated access to care, mental health problems, obesity, aging problems, and safe and affordable housing were among the most important health issues in the community. A lack of exercise, cancers, substance abuse, heart disease and stroke, and diabetes were identified by over 10 percent of respondents as among the most important issues.

**Exhibit 39**
**Question: Has a doctor, nurse, or other health professional EVER told you that you had any of the following?**

| Issue | Percent Yes |
|---|---|
| Overweight or obese | 45.5% |
| High cholesterol | 43.1% |
| High blood pressure | 39.9% |
| Some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia | 32.5% |
| A depressive disorder, including depression, major depression, dysthymia, or minor depression | 25.7% |
| Asthma | 17.8% |
| Skin cancer | 14.1% |
| Diabetes at any other time | 12.4% |
| Any other types of cancer | 9.8% |
| Diabetes when you were pregnant | 5.9% |
| Chronic Obstructive Pulmonary Disease or COPD, emphysema or chronic bronchitis | 5.1% |
| Angina or coronary heart disease | 4.2% |
| Kidney disease (Does NOT include kidney stones, bladder infection or incontinence) | 3.0% |
| A heart attack, also called a myocardial infarction | 2.6% |
| A stroke | 2.2% |

Source: Inova Health System, 2016.

Over 10 percent of respondents indicated that a health professional had told them that they had: obesity/overweight, high cholesterol, high blood pressure, arthritis, a depressive disorder, asthma, skin cancer, or diabetes at a time other than pregnancy.

Survey questions 9 and 10 asked about access to care, and for those unable to access needed medical care, the reasons why not, by service type. **Exhibit 40** identifies the number of respondents who indicated access challenges for each type of service.

**Exhibit 40: Respondents Unable to Access Services, by Service Type**

| Issue | Count |
|---|---|
| Basic Medical Care | 116 |
| Dental Care | 107 |
| Medicines | 71 |
| Mental Health Care | 61 |
| Medical/Surgical Specialty Care | 53 |
| Medical Supplies | 34 |

Source: Inova Health System, 2016.

Basic medical care, dental care, and access to proper medicines were the most frequently identified services.

**Exhibit 41** summarizes reasons why respondents have been unable to access these services.

**Exhibit 41: Access Barriers by Service Type**

| Access Barrier | Basic Medical Care | Dental Care | Mental Health Care | Medical/ Surgical | Medicines | Medical Supplies |
|---|---|---|---|---|---|---|
| Can't afford | 50 | 74 | 31 | 27 | 43 | 21 |
| No insurance | 60 | 59 | 23 | 21 | 31 | 17 |
| Insurance wouldn't cover | 13 | 29 | 21 | 16 | 27 | 11 |
| Inconvenient hours | 36 | 17 | 15 | 9 | 6 | 3 |
| Can't get appointment | 23 | 8 | 19 | 7 | 7 | 4 |
| No transportation | 14 | 11 | 9 | 9 | 7 | 5 |
| Other reasons | 10 | 7 | 6 | 5 | 6 | 4 |
| No child care | 11 | 9 | 6 | 4 | 3 | 3 |
| Language barrier | 10 | 5 | 5 | 7 | 3 | 2 |
| Don't trust providers | 8 | 5 | 4 | 6 | 2 | 2 |
| Don't know how to schedule an appointment | 2 | 3 | 8 | 2 | 2 | 1 |
| Cultural/religious beliefs | 0 | 0 | 1 | 1 | 1 | 0 |

Source: Inova Health System, 2016.

A lack of affordability (particularly for dental care) and a lack of insurance coverage were the top two most frequently identified access barriers. Respondents also identified inconvenient hours as a major barrier for basic medical care. Insurance not covering dental care and medicines was identified by a number of respondents as an issue area.

### Results: Northern-Virginia Wide Responses by Demographic Cohort

In addition to assessing responses from all residents of the Inova Fairfax Medical Campus community, survey responses from across the area served by all Inova hospitals were assessed to understand how responses vary by demographic cohort (ethnicity, race, age, gender, income, and insurance status). The following observations are based on analyzing the 2,232 survey responses, by cohort.

- Responses by race:
  - Among the 2,232 survey responses, 1,299 respondents indicated they are White or Caucasian, 144 indicated they are Black or African American, 90 Asian (including from Bangladesh, India and Pakistan), and 84 some other race; 615 respondents left this survey question blank.
  - Regarding the "most important health issues" in the community, the following issues ranked comparatively high:
    - Black/African American respondents: alcohol/drug abuse, diabetes, high blood pressure, dental problems, and safe and affordable housing

        - Asian respondents: diabetes and high blood pressure
        - White/Caucasian respondents: mental health problems, heart disease and stroke, cancers, and Lyme disease
    - The survey included questions about the number of days (during the past 30) when mental health and physical health "was not good." Average responses were:
        - Black/African American respondents: 5.4 days (mental health), 6.3 days (physical health)
        - Asian respondents: 4.1 days (mental health), 4.6 (physical health)
        - White/Caucasian respondents: 3.8 days (mental health), 4.6 days (physical health)
    - Regarding where respondents and their family members go for regular health care, Black/African American and Asian respondents indicated greater reliance on free or low-cost clinics or health centers (approximately 10 percent of these respondents versus 3 percent for White/Caucasian individuals). White/Caucasian respondents reported greater use of urgent care centers or walk-in clinics.
    - Regarding whether the respondent had been told by a health professional that he/she had certain conditions:
        - More Black/African American respondents indicated "yes" for high blood pressure (46 percent) and for overweight/obesity (59 percent) than for White/Caucasian (40 percent and 45 percent respectively)
        - More White/Caucasian respondents indicated "yes" for high cholesterol, skin cancer, and depression than other groups
        - More Asian respondents indicated "yes" for diabetes than other groups (12 percent, versus 7 percent for Black/African American and 4 percent for White/Caucasian)
    - Black/African American respondents indicated: more exposure to second hand smoke, and less healthy diets (more fast food, fewer servings of vegetables and fruit).
    - Thirty-one percent of White/Caucasian respondents indicated they have more alcoholic drinks per day (more than 2 per day for men or 1 per day for women) versus 12 percent for Asian and 19 percent for Black/African American respondents.
- Responses by age group:

- Among the 2,232 survey responses, 57 were 18 to 25 years of age, 336 were 26 to 39, 568 were 40 to 54, 412 were 55 to 64, and 347 were 65 years of age and older; 512 individuals did not provide their age range.

- Regarding the "most important health issues" in the community:

  - A number of issues were ranked highly across all age groups, including access to care, cancers, diabetes, housing that is affordable and safe, obesity/overweight and lack of exercise, and mental health problems.

  - Respondents in older age groups mentioned "aging problems" as the number one issue. Heart disease and stroke and high blood pressure also were ranked among the most important issues.

  - Respondents in younger age groups mentioned nutrition, domestic violence, and teenage pregnancy as problematic.

- Almost 80 percent of older respondents indicated they visit the emergency room only in the event of a "real emergency." Almost one-half of those in younger age groups indicated they visit emergency rooms for other reasons, such as a lack of health insurance or "doctor's office was closed" or "could not see me/my family."

- Survey responses indicate that as community residents age, they are more likely to have been told by a health professional that they have one or more health conditions, such as high blood pressure, arthritis, or high cholesterol. This is not the case, however, for depression which ranges from 19 to 27 percent of respondents across all age groups.

- Certain health-related behaviors appear less prevalent within the 65 years and older age group, such as exposure to second-hand smoke and eating fast food. This age group, however, has the highest proportion indicating they do not "exercise for 30 minutes or more a day."

- Responses by income level:
  - Among the 2,232 survey responses,

    - 45 were from individuals who indicated their annual household income was less than $10,000,

    - 80 were received from those with income between $10,000 and $24,999,

    - 172 for $25,000 to $49,999,

    - 389 for those $50,000 to $99,999,

    - 333 for those $100,000 to $149,999, and

- 392 with incomes of $150,000 and higher.
- 821 individuals did not provide their income range.

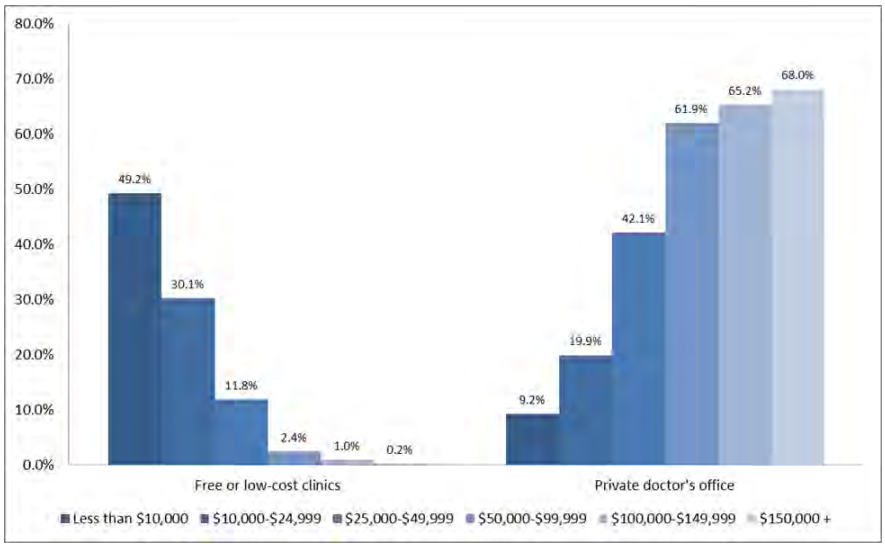
- Regarding the "most important health issues" in the community:
  - Dental problems, diabetes, and bullying were ranked comparatively high by the lowest income groups.
  - Heart disease and stroke, overweight/obesity and mental health problems were ranked comparatively high by the highest income groups. "Mental health problems" and "Access to care" were ranked the most important health issues (tied) for the $150,000 and above group. Access to care was ranked the most important health issue in the community in all other groups as well.

- Regarding the number of days (during the past 30) when physical health "was not good," the average for all respondents was 5.0 days; however, those with incomes under $10,000 averaged 10.3 days. This statistic fell as income levels rose, with 10.3 days for the lowest income category and 3.9 days for the highest income category (**Exhibit 42**).

**Exhibit 42: Average Monthly Unhealthy Days, by Income Level**

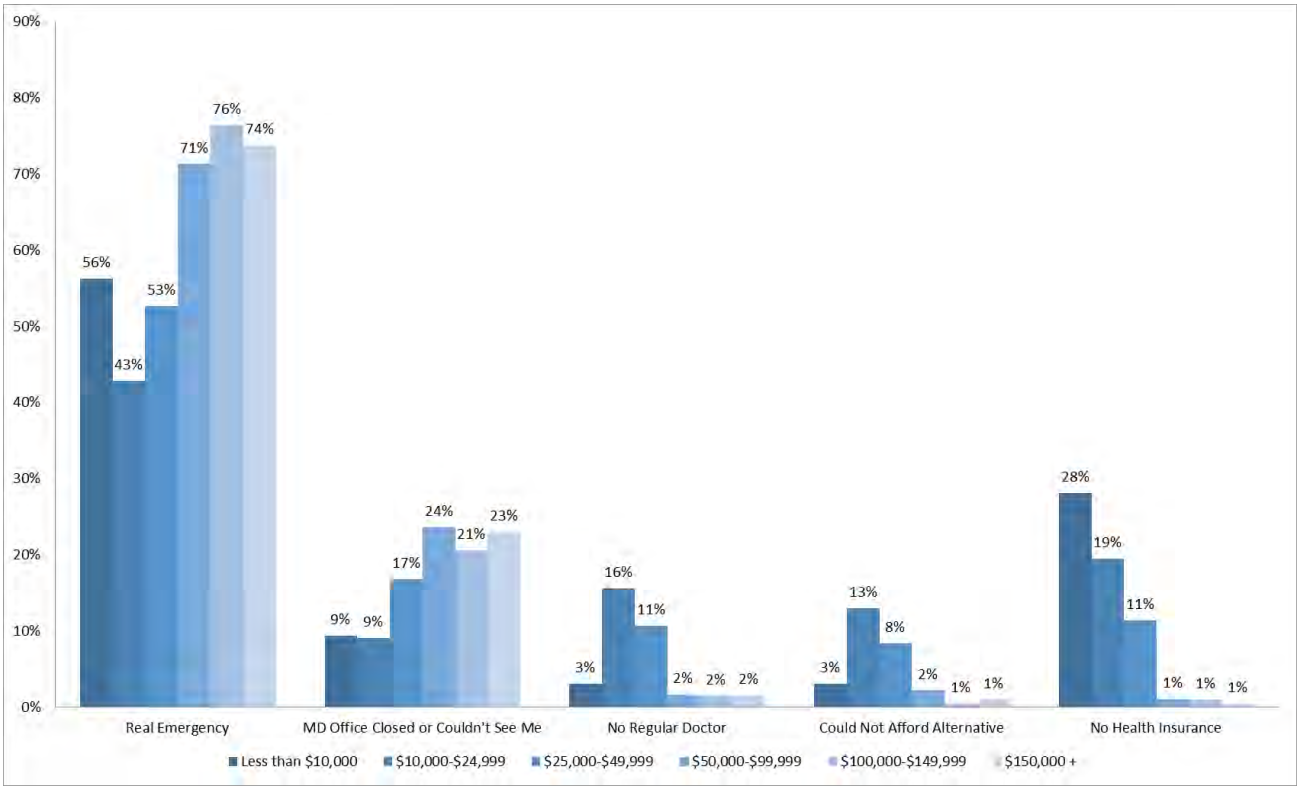

- Respondents with the lowest income levels relied the most on free or low-cost clinics or health centers and on hospital emergency rooms for their regular health care (**Exhibit 43**). Most respondents in higher income categories received regular care in private doctor's offices (e.g., 370 out of the 392 respondents with incomes of $150,000 and higher).

**Exhibit 43: Use of Free Clinics and Private Doctor's Offices, by Income Level**




- Over seventy percent of higher income respondents indicated they tend to go to an emergency room in the event of a real emergency (unless their doctor's office is closed or otherwise unavailable). Lower income respondents go to an emergency room either because they are uninsured or because they do not have a regular medical doctor (**Exhibit 44**).

**Exhibit 44: Reasons for Emergency Room Visit(s), by Income Level**



- Lower-income respondents indicated greater prevalence of diabetes and COPD or emphysema than higher income groups.

- Certain health-related behaviors appear more prevalent within lower-income groups, such as poor nutrition and unprotected sex.

- Respondents indicated that having alcoholic drinks (more than 2 per day for men or 1 per day for women) increases with income: 5 percent of those with incomes under $10,000 and 12 percent of those with incomes between $10,000 and $24,999 indicated this level of alcohol use – increasing to 35 percent for those with incomes of $150,000 and higher.

- Responses by payer source:

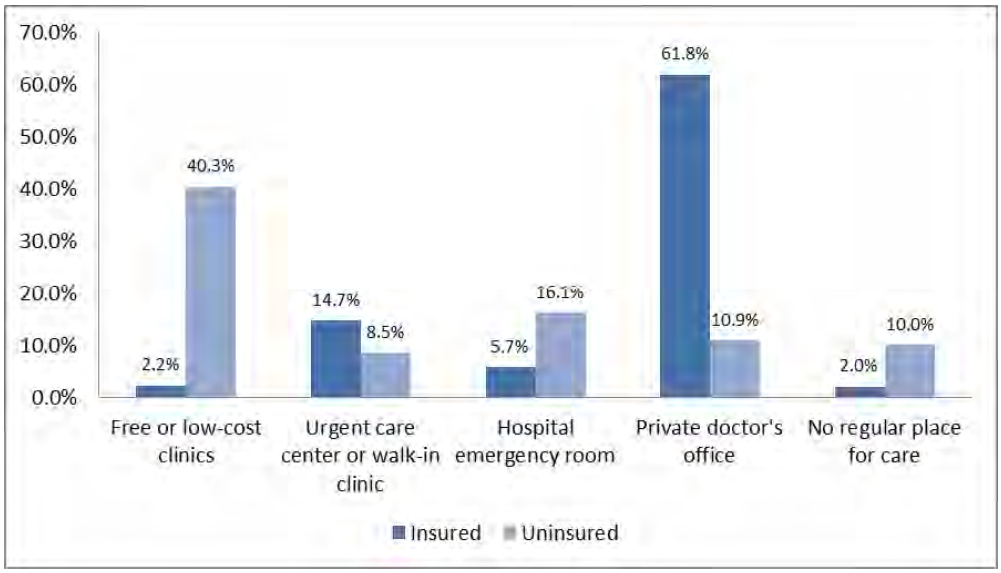
  - Among the 2,232 survey responses, 122 indicated they were uninsured; 1,594 indicated they had some form of insurance coverage – either Medicare, Medicaid, other governmental (e.g., TRICARE) or private insurance. 516 respondents did not provide insurance coverage information.

  - Three out of the top five most important issues were the same among both those with and without insurance (access to care [1], aging problems [4] and housing that is safe and affordable [5]). Among the uninsured, dental problems and alcohol/drug abuse were number 2 and 3 respectively. For insured respondents, the second and third most important issues were mental health problems and overweight/obesity.

  - Regarding the number of days (during the past 30) when physical health "was not good," the average for uninsured respondents was 7.4 days and for insured respondents was 4.8 days.

  - Fifty-six (56) percent of uninsured respondents said they rely on free or low-cost clinics or health centers and on hospital emergency rooms for their regular health care, compared to 8 percent for those with insurance (**Exhibit 45**). Ten (10) percent of uninsured respondents indicate they "don't have a regular place for medical care" compared to 2 percent for those with insurance.

**Exhibit 45: Types of Providers Used, by Insurance Status**




- Seventy-eight (78) percent of uninsured respondents indicated that they went to an emergency room in the last year, with 37 percent of these visits representing "real emergencies." Reasons for these visits included a lack of health insurance, not having a regular medical doctor, and lack of affordability. Forty-five (45) percent of insured respondents went to an emergency room, with 73 percent of these visits being a "real emergency."

- Generally, fewer uninsured respondents had been told by a health professional that they have one of a list of specific health conditions than insured respondents, with the exceptions of diabetes and "overweight or obese."

- Regarding questions about health behaviors, uninsured respondents indicated that they have less healthy nutritional and exercise habits, more unprotected sex, and more tobacco and e-cigarette use.

Survey findings varied significantly depending on respondent ethnicity, race, income, insurance status, and other demographic characteristics.

## Key Stakeholder Interviews

### Findings

The following issues were identified by external informants as those of greatest concern to community health in the Inova Fairfax Medical Campus community, and are presented in alphabetical order.

**Access to Health Care.** While mental health care and elderly care have been mentioned previously, interviewees identified several other health care services as difficult to access.

Respondents identified mobile health units, expanded free clinics, and other healthcare provider services as potential solutions.

- **Dental Care.** A resident's ability to receive proper dental care was a concern for many of those interviewed. Interviewees believed that a lack of dental coverage in insurance plans and affordability were the main causes.

- **Primary Care.** Interviewees noted that primary care can be difficult to access in the community, especially for underserved communities. This concern was magnified by a belief that many residents still used the emergency room as a primary care provider. Cost of care, lack of insurance, and lack of information were cited as causes of the lacking care.

- **Preventive Care.** Interviewees believed that most health care in the area focuses more on treatment rather than health promotion and prevention activities. Some issues with prevention were previously noted, and in general there is a need for more focus on promoting good health and healthy lifestyle choices.

**Cultural Understanding and Health Inequities.** Interviewees indicated that one of the larger barriers to securing access to health services in the Fairfax community was a lack of cultural understanding and competency from providers. Respondents feared that many immigrants and populations that did not speak English had trouble finding providers that could accommodate them. This belief was thought to be true among an array of services, but particularly for mental health care. Interviewees also noted that among immigrant populations there were often different priorities in terms of preventive care in their home countries as well as different access to healthy lifestyle choices. Minority populations and immigrant populations are particularly underserved in the region. Undocumented workers were seen as especially susceptible to health inequities.

**Elderly Conditions and Care.** With the changing demographics of the community trending towards a growing elderly population, elderly conditions and proper care for the population arose as an issue from several interviews. Outside of conditions related to unhealthy lifestyle mentioned previously, other conditions cited included Alzheimer's disease, dementia, and joint problems. Interviewees also expressed concern about caring for the elderly in the community, particularly ensuring that they could age in place healthily. In-home care and expanded assisted living communities were cited as services that could be bolstered.

**Issues with Insurance.** There were several respondents who indicated that health insurance issues were a concern in the Fairfax community. Information about health insurance and its usage has been discussed previously in this section. Additionally, many respondents felt that a lack of health insurance was one of the leading causes of poor health access in the community. This was particularly true in cases of lower-income and undocumented workers. Several respondents also cited the lack of Medicaid expansion in Virginia as a driver of access issues in the community.

**Lack of Information.** In many interviews conducted, a lack of proper information in regards to healthcare was mentioned. Respondents indicated that there was a general lack of understanding

of the healthcare system and which resources and services were accessible to residents. Respondents also stated that there was a general lack of knowledge about health insurance and its proper usage. Furthermore, when asked about current programs in place, some interviewees were unaware of the many programs around the community, including some of Inova's programs. Respondents also indicated that one of their most desired programs would be a single place for information that connected residents to all resources in the community.

**Mental Health and Services.** Throughout a majority of the interviews, either mental health conditions or access to mental health services was identified as a top concern among respondents. Mental health conditions, particularly depression and suicidal thoughts, were identified as prevalent throughout the community. Depression and suicidal thoughts were particularly identified among youth and adolescent populations, in conjunction with stress from high education expectations. Additionally, interviewees identified mental and behavioral health services as the service with the most access issues in the Fairfax community. Along with general mental health services, long-term institutional care, child psychiatrists, and the need to divert patients from incarceration to treatment were all services that were cited as needed. Interviewees also commented on the need for more ongoing chronic care opportunities in mental health, not just emergency or acute services.

**Physical Environment.** Individuals interviewed believed that the physical environment in the Fairfax community is not conducive to a healthy lifestyle. Several interviewees described the community as having poor access to sidewalks, making it a non-walkable area. Others highlighted poor access to parks, trails, and other areas for physical activity. A high amount of traffic was also described as a problem in the area.

**Substance Abuse.** An array of substance abuse issues were identified across the community as important to those interviewed. Alcohol abuse and binge drinking was the most specified area of abuse. Opioid use, particularly in the form of prescription drugs and heroin use, was also highly cited. While substance abuse was a concern across the community, respondents stated that adolescent drug use was of particular concern.

**Transportation.** Several interviewees identified the lack of transportation options in the community as a problem. Along with the community not being walkable, the lack of transportation options was seen as a major barrier for residents to receive proper health care. This problem was identified as a particular need among low-income and elderly residents.

**Unhealthy Lifestyles and Resulting Conditions.** Many respondents identified unhealthy lifestyle behaviors around nutrition and activity and their resulting health conditions as an issue in the Fairfax community. Diabetes and pre-diabetes were the most commonly cited conditions related to unhealthy lifestyles. Hypertension, obesity, and cardiovascular disease were other conditions commonly stated. Poor diet, a lack of access to healthy foods, and a lack of exercise or daily movement were all identified as primary contributors.

### Interview Participants

Individuals from the following organizations participated in the interview process (**Exhibit 46**).

**Exhibit 46: Interview Participants**

| Organization | Description | Populations Represented |
|---|---|---|
| Fairfax County Board of Supervisors | Governing body of Fairfax County | General population |
| Fairfax County Health Care Advisory Board | Board charged with assisting Fairfax County Board of Supervisors in health policy | General population<br>Physicians |
| Fairfax County Health Department | Public health department | General population |
| Fairfax County Multicultural Advisory Council | Citizen-led advisory commission on cultural communities to health department | Immigrant community, Hispanic community, Muslim community, East African community, Korean community, Indian community |
| Fairfax County physicians | Local area doctors and physicians | General population<br>Physicians |
| Fairfax County Public Schools | School system of Fairfax County | General population<br>Youth/adolescents |
| Fairfax-Falls Church Community Services Board | Public agency for support of those with mental illness, substance abuse issues, or intellectual disabilities | Mentally ill population<br>Substance abuse needs<br>Intellectually disabled |
| George Mason University, College of Health and Human Services | University program dedicated to health | General population<br>Students |
| Grace Ministries | Faith-based community outreach program | Faith-based community<br>Immigrant population |
| Inova Board of Directors | Controlling body of Inova Health System | General population |
| Inova Fairfax Hospital Internal Staff | Internal working staff of Inova Fairfax Hospital | General population<br>Physicians |
| Inova Office of Health Equity | Inova office dealing in health disparities | Marginalized populations<br>Minority populations |
| Northern Virginia Family Services | Non-profit | Adolescent/youth<br>Low income<br>Homeless<br>Mentally ill |
| Northern Virginia Health Foundation | Healthcare grant organization | General population<br>Low Income<br>Uninsured/Underinsured |
| Partnership for a Healthier Fairfax | Citizen-led health coalition and strategic planning organization | General population<br>Business community |
| Route 1 Human Services Task Force | Support and advocacy program for marginalized populations along Richmond Highway | Homeless population<br>Low income population |

## APPENDIX A – COMMUNITY SURVEY INSTRUMENT

# Your Opinion Matters!

Inova is doing a community health needs assessment to help find and act on the biggest health and healthcare issues in our communities. This survey will help us learn more about health where you live.

This survey will take 15 minutes or less to complete. There are no right or wrong answers to these questions, we want to hear your thoughts and opinions. All answers are completely anonymous and confidential.

**Thank you for your time and input**.

1. What is your ZIP Code? _____

2. What do you think are the most important health issues in your community/neighborhood? Check only 3.

- ☐ Access to care
- ☐ Aging problems (e.g., arthritis, hearing/vision loss)
- ☐ Alcohol/Drug abuse
- ☐ Bullying
- ☐ Cancers
- ☐ Child abuse/neglect
- ☐ Dental problems
- ☐ Diabetes
- ☐ Domestic Violence
- ☐ Gun-related injuries
- ☐ Heart disease and stroke
- ☐ High blood pressure
- ☐ HIV/AIDS
- ☐ Homicide
- ☐ Housing that is adequate, safe and affordable
- ☐ Infant death
- ☐ Infectious diseases (e.g., hepatitis, TB)
- ☐ Lack of exercise
- ☐ Lyme Disease
- ☐ Mental health problems
- ☐ Motor vehicle crash injuries
- ☐ Nutrition
- ☐ Overweight/Obesity
- ☐ Rape/sexual assault
- ☐ Respiratory/lung disease
- ☐ Sexually transmitted diseases
- ☐ Suicide
- ☐ Teenage pregnancy
- ☐ Tobacco Use
- ☐ Other: _____

3. Thinking about your mental health (including stress, depression, and problems with emotions), for how many days during the past 30 days was your mental/emotional health not good? ____

4. Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good? _____

5. Where do you and your family members go for regular health care? (Please select all that apply.)
   - ☐ Free or low-cost clinic or health center (like HealthWorks, Neighborhood Health, CHCN Clinic, Arlington Free Clinic, etc.)
   - ☐ Urgent care center or other walk-in clinic (like CVS, Walgreens, etc.)
   - ☐ Hospital emergency room
   - ☐ Health department
   - ☐ Provider of alternative medicine (i.e., herbalist, homeopathic, acupuncturist)
   - ☐ Private doctor's office (MD, Nurse Practitioner, Physician's Assistant)
   - ☐ Chiropractor
   - ☐ I don't have a regular place for medical care
   - ☐ Other: _____

6. During the last year, why did you or a family member go to an emergency room (if at all)? Please select all that apply.
   - ☐ I/my family had a real emergency
   - ☐ The doctor's office was closed or could not see me/ my family
   - ☐ I/my family do not have a regular medical doctor
   - ☐ I/my family could not afford health services somewhere else
   - ☐ I/my family do not have health insurance
   - ☐ Did not go to the emergency room

7. Before today, how long has it been since you last saw a doctor for a routine checkup? A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition.
   - ☐ Within the past year (anytime less than 12 months ago)
   - ☐ Within the past 2 years (more than 1 year but less than 2 years ago)
   - ☐ Within the past 5 years (more than 2 years but less than 5 years ago)
   - ☐ 5 or more years ago
   - ☐ Don't know / Not sure
   - ☐ Never

8. Has a doctor, nurse, or other health professional EVER told you that you had any of the following?

| | Yes | No | Don't Know/ Not Sure |
|---|---|---|---|
| High blood pressure | ☐ | ☐ | ☐ |
| High cholesterol | ☐ | ☐ | ☐ |
| A heart attack, also called a myocardial infarction | ☐ | ☐ | ☐ |
| Angina or coronary heart disease | ☐ | ☐ | ☐ |
| A stroke | ☐ | ☐ | ☐ |
| Asthma | ☐ | ☐ | ☐ |
| Skin cancer | ☐ | ☐ | ☐ |
| Any other types of cancer | ☐ | ☐ | ☐ |
| Chronic Obstructive Pulmonary Disease or COPD, emphysema or chronic bronchitis | ☐ | ☐ | ☐ |
| Some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia | ☐ | ☐ | ☐ |
| A depressive disorder, including depression, major depression, dysthymia, or minor depression | ☐ | ☐ | ☐ |
| Kidney disease? (Does NOT include kidney stones, bladder infection or incontinence) | ☐ | ☐ | ☐ |
| Diabetes when you were pregnant? | ☐ | ☐ | ☐ |
| Diabetes at any other time? | ☐ | ☐ | ☐ |
| Overweight or Obese | ☐ | ☐ | ☐ |
| Any other chronic condition?<br>Write condition:_____ | ☐ | ☐ | ☐ |

9. How long has it been since you last went to a dentist or a dental clinic for any reason? Include visits to dental specialists, such as orthodontists.
   - ☐ Within the past year (anytime less than 12 months ago)
   - ☐ Within the past 2 years (more than 1 year but less than 2 years ago)
   - ☐ Within the past 5 years (more than 2 years but less than 5 years ago)
   - ☐ 5 or more years ago
   - ☐ Don't know / Not sure
   - ☐ Never

10. In the past 12 months, was there a time when you needed medical care (including mental health, dental health, medicines, etc.) but could not get it?
    - ☐ Yes
    - ☐ No
    - ☐ Don't know/Not sure

11. If you answered “Yes”, why not? Check all that apply.

| | Basic Medical Care | Dental Care | Mental Health Care | Medical/ Surgical Specialty Care | Medicines | Medical Supplies |
|---|---|---|---|---|---|---|
| No insurance | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Can’t get appointment | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Can’t afford it/ too expensive | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Inconvenient hours/can’t get out of work | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| No child care | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Insurance wouldn’t cover | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| No transportation | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Don’t trust medical professionals | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Cultural/religious beliefs | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Language barrier | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Don’t know how to find or schedule an appointment | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other reasons | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

12. In the last 30 days, did you:

| | Yes | No | Don't Know/ Not Sure |
|---|---|---|---|
| Chew tobacco/snuff or smoke cigarettes, cigars, pipes, etc. | ☐ | ☐ | ☐ |
| Use e-cigarettes | ☐ | ☐ | ☐ |
| Breath second-hand smoke | ☐ | ☐ | ☐ |
| Use drugs prescribed for someone else | ☐ | ☐ | ☐ |
| Have more than 2 alcoholic drinks per day (men) or more than 1 alcoholic drink per day (women) | ☐ | ☐ | ☐ |
| Drive in a car without a seat belt | ☐ | ☐ | ☐ |
| Eat fast food more than once in a week | ☐ | ☐ | ☐ |
| Travel in a car with small children without using a car seat | ☐ | ☐ | ☐ |
| Spend more than 20 minutes in the sun without sunscreen (during the summer months) | ☐ | ☐ | ☐ |
| Exercise for 30 minutes or more a day | ☐ | ☐ | ☐ |
| Eat at least 2 servings of vegetables a day | ☐ | ☐ | ☐ |
| Eat at least 2 servings of fruit a day | ☐ | ☐ | ☐ |
| Sleep at least 8 hours every night | ☐ | ☐ | ☐ |
| Have sex without using a condom or dental dam (if not in a monogamous relationship) | ☐ | ☐ | ☐ |

13. Please mark when you have done the following things:

| | Less than 12 months | More than 1 year, less than 2 years | More than 2 years, less than 5 years | More than 5 years ago | Don't know/Not sure | Never |
|---|---|---|---|---|---|---|
| Had a colonoscopy | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Had a mammogram | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Had cholesterol checked | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Had a clinical breast exam | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Had a pap test | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Had a PSA test | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Had an HIV test | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Got a flu vaccine | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Got the pneumonia vaccine | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Got the shingles vaccine | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Got a tetanus booster | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

14. Before today, were you at all limited in any activities because of physical, mental, or emotional problems?
    - ☐ Yes
    - ☐ No
    - ☐ Don't know/Not sure

**Please answer the following questions so that we can better understand how different members of our diverse community feel about the issues listed above.**

15. Are you of Hispanic, Latino/a, or Spanish origin?
    - ☐ Yes
    - ☐ No
    - ☐ Don't know / Not sure / Choose not to answer

16. With which one of these groups do you most identify?
    - ☐ White/Caucasian
    - ☐ Black or African American
    - ☐ Asian, including from Bangladesh, India and Pakistan
    - ☐ American Indian or Alaska Native
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☐ Other
    - ☐ Don't know / Not sure / Choose not to answer

17. How old are you?
    - ☐ 18 – 25
    - ☐ 26 – 39
    - ☐ 40 – 54
    - ☐ 55 – 64
    - ☐ 65 or over

18. Do you have children less than 18 years of age living in your household?
    - ☐ Yes
    - ☐ No

19. What is the highest grade or year of school you completed?
    - ☐ Never attended school or only attended kindergarten
    - ☐ Grades 1 through 8 (Elementary)
    - ☐ Grades 9 through 11 (Some high school)
    - ☐ Grade 12 or GED (High school graduate)
    - ☐ College 1 year to 3 years (Some college or technical school)
    - ☐ College 4-year degree or more (College graduate)

20. What is your annual household income from all sources?

- ☐ Less than $10,000
- ☐ $10,000 - $24,999
- ☐ $25,000 - $49,999
- ☐ $50,000 - $99,999
- ☐ $100,000 - $149,999
- ☐ $150,000+
- ☐ I don't know or choose not to answer

21. How do you pay for your health care?

- ☐ Use cash or credit/debit card (no insurance)
- ☐ Health insurance through my employer or my spouse's employer
- ☐ Private health insurance I pay for
- ☐ Medicaid
- ☐ Medicare
- ☐ TRICARE, VA or Military
- ☐ Indian Health Services
- ☐ Other _____

22. With what gender do you identify?

- ☐ Male
- ☐ Female
- ☐ Transgender – Male to Female
- ☐ Transgender – Female to Male
- ☐ Other: _____

# APPENDIX B – ACTIONS TAKEN SINCE THE PREVIOUS CHNA

This appendix discusses community health improvement actions taken by Inova since its last CHNA reports were published, and based on the subsequently developed Implementation Strategies. The information is included in the 2016 CHNA reports to respond to final IRC 501(r) regulations, published by the IRS in December 2014.

Priority Strategic Initiatives

1. Improve collaboration and coordination among organizations providing health and social services.
    a. Inova has representation on the Partnership for a Healthier Fairfax Steering Committee and actively participates in the Fairfax County Mobilizing for Action through Partnerships and Planning (MAPP) process. Inova staff also participate in the Northern Virginia Health Services Coalition.
    b. Inova has a representative as an ex-officio member of the Neighborhood Health (formerly ANHSI) board of directors. Neighborhood Health is an Alexandria-based Federally Qualified Health Center or "FQHC". Starting at the end of 2014, Inova also has a representative on the HealthWorks board of directors. HealthWorks is an FQHC in Herndon and Leesburg.
    c. In April 2013, more than 50 clergy, faith community nurses and health ministry coordinators turned out for a Palliative Care Conference. Inova Congregational Health Partnership presented the event in partnership with Inova's Palliative Care program, Pastoral Care Services, Life with Cancer® program, and the Community Affairs Executive from Inova Fairfax Medical Campus. Participants learned the many aspects of palliative care, specialized medical care for people with serious illnesses with a goal of improving the quality of life for the patients and their families.
    d. The FACT program, which is offered as a community service at no charge to victims, combines specialized nurse examiners and a private environment so that evidence of abuse can be collected and documented without further traumatizing the victim. The FACT department is also an important component in cross-jurisdictional crime reduction efforts and community outreach programs. FACT representatives serve on five multidisciplinary teams for children in the City of Alexandria as well as Arlington, Fairfax, Loudoun and Prince William counties. In 2015, the program continued to expand its prevention-focused outreach at college campuses and community organizations. Between 2013 – 2015 the FACT Department has helped almost 1,600 individuals.
    e. The InovaCares for Seniors™ PACE® Program is a comprehensive, coordinated healthcare program and adult day health service provided within the welcoming environment of its community-based center in Fairfax, VA.
    f. In 2015 Inova provided grants to community groups addressing population health needs described in the Inova Community Health Needs Assessments. In 2015 funds totaled $30,000 and in 2016 grant funds will increase to $50,000.

2. Improve access to care, including preventive care, primary care, specialty care, and dental care.
    a. Inova works to ensure access to services for the indigent through direct and in-kind support to Neighborhood Health and HealthWorks. These contributions exceeded $1.2 million from 2013 – 2015.
    b. Inova has also provided direct and in-kind contributions to NOVA Scripts, the Center for Multicultural Human Services, Shenandoah University and the Nova Dental Clinic. Total contributions to these organizations totaled $2.6 million.
    c. Supported the annual Northern Virginia Dental Society's Mission of Mercy event through a cash donation as well as an in-kind phlebotomist for post-exposure testing and post-exposure prophylaxis (PEP) if necessary. Assisted the organization ahead of time with development of a needle stick protocol.
    d. Inova Transitional Services is a community-based program developed to identify and bridge gaps between illness and recovery. This model establishes cross-setting communication and collaboration and ensures coordination and continuity of care as patients transfer across care delivery settings. The program trains internal teams and works in partnership with the community to develop improved health outcomes at a lower cost for vulnerable patient populations. The Inova Discharge/Transitional Care Clinic assists patients that have been discharged from the hospital and have no other medical home. Through the Discharge Clinic, patients have a place to go that will help them manage their complex disease states until they can be transitioned to a permanent medical home. From 2013 – 2015, Inova Transitional Services provided over 36,000 encounters.
    e. Inova Juniper Program (IJP) provides outpatient primary medical care, mental health therapy, substance abuse treatment, pharmaceutical assistance, nutritional counseling and medical case management services to 1,638 persons living with HIV disease in the suburban Virginia region. To maximize accessibility for clients, services are provided at the main location in Fairfax, as well as six satellite clinics (Dumfries, Manassas, Mt. Vernon, Arlington/Falls Church, Leesburg, and Herndon), hospitals, homes and other community locations throughout the region. From 2013 – 2015, Inova Juniper provided over 100,000 visits throughout the region.
    f. Care Connection for Children (CCC) is funded by the Virginia Department of Health. The goal of CCC is to help families coordinate community and educational resources with medical expertise to ensure that children with special healthcare needs can reach their maximum potential. CCC partners with families of children who have chronic healthcare needs to help open doors to needed resources and coordinate quality family-centered care. CCC is committed to helping children maximize their potential in a caring, innovative and culturally sensitive manner. From 2013 – 2015, CCC served 1,936 families.
    g. The Inova Lions Eye Clinic provides free eye care (comprehensive ophthalmic care, including medical and surgical care for all types of conditions of the eye) to uninsured adult patients who are at or below 200 percent of the Federal Poverty Guidelines. Clinic staffing includes an employed ophthalmologist, and ophthalmic technician, and a bilingual receptionist. A number of volunteer specialist physicians also help care for clinic patients. The clinic is funded both

by Inova and the Virginia Lions Eye Institute Foundation. From 2013-2015, the clinic had over 8,000 patient visits.

h. The Inova Kellar Center has provided behavioral health services for children, adolescents, and their families for twenty years. The program provides a full continuum of outpatient services and programs, including individual, family and group therapy, medication management, psychiatric evaluations, psychological testing, intensive outpatient programs, intensive home based services, and partial hospitalization programs. Specific programs also include the After School Intensive Outpatient Program (for male and female adolescents ages 13 and above) and The Kellar School, which served students grades 3 through 12 who have been identified for special education services. The treatment services and programs are provided to children and families regardless of ability to pay.
i. Inova Partnership for Healthier Kids (PHK) is a community-based outreach program designed to increase access to care for uninsured children in Northern Virginia. Through partnerships with schools in Fairfax County, Loudoun County, Prince William County, the City of Alexandria, and with numerous community organizations, the program provides families with application and enrollment assistance for Medicaid and CHIP, and referrals to local safety net providers. From 2013 – 2015, the program helped 10,439 children access health services across Northern Virginia.
j. In December of 2012, Inova acquired INTotal Health to fulfill a portion of Inova's Vision 2015. As a Managed Care Organization (MCO), INTotal Health specializes in Medicaid services and for the past nine years the health plan has played an important role in helping more than 55,000 members throughout Northern Virginia, Alleghany/Roanoke, Culpeper, Winchester, and far southwestern regions of Virginia.
k. For years the safety net partners, including Inova, have been working closely with the Medical Society of Northern Virginia to establish a network of specialty providers for indigent patients who are in need of these services. The group is working to develop a system that supports the specialists to include transportation for the patients, interpreters when needed and scheduling for the visit. The primary care safety net providers are committed to seeing the patients for follow-up care and labs that don't need a specialist.
l. InovaCares for Seniors is a health plan based on the nationally respected Program of All-Inclusive Care for the Elderly (PACE®) model. This innovative program provides integrated healthcare and social services to seniors in a community-based setting. The goal is to keep seniors healthy and living within their community for as long as possible. InovaCares for Seniors is the first comprehensive, coordinated care program in Northern Virginia preserving the independence of participants in the community.

3. Decrease the prevalence of diet and exercise-related issues, including disparities in diabetes mortality and high rates of overweight/obesity.
    a. In 2013 and 2014, Promotores worked with women with gestational diabetes receiving prenatal care at the Inova Cares Clinic for Women. The Promotores were individually matched with patients to provide one-to-one guidance throughout their pregnancy and early infancy stages through telephonic support.

Women participating in this program reported gaining knowledge and understanding of their gestational diabetes and how to best manage their diagnosis. In addition, they reported feeling confident about asking questions to medical providers. In response to a question about their confidence level in management of their Gestational Diabetes, 85.42% of the 384 survey responses reported being "very sure" or "sure" they are now able to better self-manage their gestational diabetes. Furthermore, 91.69% out of 385 responses reported being "very comfortable" or "comfortable" in communicating information with their medical provider related to their gestational diabetes.

b. The Inova Center for Wellness and Metabolic Health (ICWMH) provides visits for uninsured, underinsured, and fully insured diabetic patients with an Endocrinologist and Nurse Practitioner. Services include diabetes classes and individual appointments including Medical Nutrition Therapy visits to help people learn about their diets and how nutrition affects health and wellbeing. From 2013 – 2015, ICWMH provided almost 20,000 patient visits overall. ICWMH tracks patient compliance data, and in 2015, 89 percent of patients met behavioral goals. The success of ICWMH contributes to wellness for diabetic patients and prevents or delays longer term negative and often debilitating effects of diabetes and related chronic diseases. ICWMH continues to be recognized by the American Diabetes Association.
c. To help local residents afford fresh, healthy food, and ultimately reduce the incidence of chronic disease, Inova started its 'SNAP Double Dollars' program in 2011. The program builds on the growing acceptance of SNAP benefits at farmers markets, where fresh, local produce is sold seasonally. Through Inova's program, SNAP recipients are able to double their farmers market purchases, up to $10. During 2013 – 2015, over $16,000 of Inova funds were used for SNAP Double Dollars recipients. Both the farmers markets and the individuals receiving these matching funds benefit, with community members becoming less food insecure and experiencing enhanced nutrition.
d. The Northern Virginia Healthy Kids Coalition is a community partnership designed to get kids healthy and to fight obesity. The partnership includes area school districts, Inova, and others. The Coalition sponsors and promotes a number of initiatives, including "9-5-2-1-0 For Health" (9 hours of sleep, 5 servings of fruits and vegetables, 2 hours or less of screen time outside of school, 1 hour of physical activity, and 0 sugary beverages).
e. The third annual "Let's Move the Needle on Childhood Obesity" event was held on Sept. 26, 2013. The event was co-sponsored by the Community Foundation for Northern Virginia, and was attended by more than 170 school administrators and teachers, business leaders, government officials and nonprofit leaders. Twenty grants of $1,000 each were awarded in support of school and community based programs in Northern Virginia to encourage more activity and/or better nutrition for students during the 2013 – 2014 School Year. Awardees included Clearview Elementary School, Fairfax Villa Elementary School, Hutchison Elementary School, Keene Mill Elementary School, Mosby Woods Elementary School, Oak View Elementary School, Sleepy Hollow Elementary School, and Springfield Estates Elementary School in Fairfax County as well as Antietam Elementary

School, Godwin Middle School and Rockledge Elementary School in Prince William County, Baldwin Elementary School in Manassas Park City and Falls Church High School in Falls Church City.

Outside of these priority areas identified in the IFMC 2013 CHNA Implementation Plan, the hospital has continued community benefit programs that address a variety of health concerns. Inova operates much of its community health programs centrally, and as a result, many of these programs are not operated directly by IFMC.

1. The Office of Health Equity (OHE) identifies and addresses health disparities in northern Virginia through internal and community initiatives. The department is dedicated to the elimination of disparities in the community through community partnership, diversity and cultural competence education, and provision of language services. In support of patient safety and satisfaction, language interpretation and translation services are provided at every Inova facility, to facilitate communication with the 14 percent of Inova's patient population who are limited English proficient (LEP). Medical Interpretation in over 200 languages is provided by on-site medical interpreters and telephonic interpreters. In 2015, Inova delivered 59,048 hours of interpreter services and 13,715 hours of Sign Language interpretation across Inova facilities. Over 572 vital documents were translated into Inova's top languages.

2. The Inova Comprehensive Addiction Treatment Services Program (CATS) is a leader in providing the highest quality addiction treatment services in Northern Virginia and surrounding areas. A series of structured programs offers effective, compassionate treatment for individuals dealing with all forms of substance abuse disorders, including addiction to alcohol, prescription drugs, heroin, cocaine and other drugs. Services are available to adults ages 18 and older. The range of services includes: Inpatient Medical Detoxification, Partial Hospitalization Program, Intensive Outpatient Program, Outpatient Groups, Medication Assisted Therapy and Substance Use Assessments. From 2013 – 2015, the CATS Inpatient and Partial Hospitalization Program served 16,540 clients and provided 37,156 Intensive Outpatient Services.

3. The mission of Life with Cancer (LWC) is to enhance the quality of life of those individuals in the community affected by cancer. The program addresses the specific needs by providing individual and family counseling, support groups, educational seminars, workshops on cancer diagnosis and treatment, and a full array of complimentary therapies. Life with Cancer is generously supported by our community; therefore all services are available at no charge to residents of the Washington Metropolitan area.

4. Since the 2013 CHNA, Inova Behavioral Health created a new department, Inova Behavioral Health Access Services (IBHAS), which acts as an entry way into all services within Behavioral Health. IBHAS serves as an access point for all of Inova Behavioral Health's inpatient and outpatient programs by providing rapid access to assessments for individuals in need of behavioral health and addiction services. IBHAS includes a Central Access Call Center, Psychiatric Liaison services for patients seen in Inova Emergency Departments, scheduled Assessment Services for our Partial Hospitalization Program and

CATS Intensive Outpatient Programs, and walk-in services through the Inova Psychiatric Assessment Center (IPAC). IPAC provides a unique and valuable resource to our community by offering urgent psychiatric assessments for adults ages 18 and older and referrals to appropriate providers and levels of care.

5. Climate change and the resulting increases in temperature, air pollution and extreme weather events impact the health of our population, particularly the most vulnerable (seniors, children, and lower income).[11,12] Inova is working to mitigate those impacts by reducing energy use in our facilities, offering alternative transportation options to employees, and expanding access to local and sustainable food in our cafeterias.

[11] Watts N, Adgar WN, et al. 2015. Health and climate change: policy responses to protect public health. The Lancet, June 2015.
[12] EPA. 2015. Climate Change in the United States: Benefits of Global Action. United States Environmental Protection Agency, Office of Atmospheric Programs, EPA 430-R-15-001.]