TRANSFORMING HEALTH IN PRINCE GEORGE'S COUNTY, MARYLAND: **A PUBLIC HEALTH IMPACT STUDY**

UNIVERSITY OF MARYLAND SCHOOL OF PUBLIC HEALTH

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SCHOOL OF
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This document and the supporting technical reports are available at *sph.umd.edu/princegeorgeshealth.*

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INTRODUCTION TO THE PUBLIC HEALTH IMPACT STUDY OF PRINCE GEORGE'S COUNTY

Prince George's County, Maryland is poised for changes that will lead to improved health and quality of life for its citizens. Plans for a transformed new regional health care system that focuses on population health are under way through a unique partnership among the County, the state and academic and health care institutions. These plans come at a time of great momentum at the national, state and County levels to advance health care reform and eliminate health disparities.

On June 28, 2012, the Supreme Court upheld the constitutionality of the Patient Protection and Affordable Care Act (ACA). Under the leadership of the O'Malley-Brown administration, the state of Maryland has created a Health Benefit Exchange, designed to expand health care coverage and fulfill the provisions of the ACA. The state also is proactively pursuing strategies to promote health equity, as demonstrated by the passage of legislation creating "health enterprise zones" to expand and improve access to care in underserved areas. Prince George's County Executive Rushern L. Baker, III has placed health as one of his administration's top priorities, and together with the County Council has taken deliberate steps to enhance the County's safety net system and to address social and environmental determinants of health.

To inform the design of this new system to improve health and health care in Prince George's County, the University of Maryland School of Public Health was commissioned to assess the proposed system's potential public health impact and to answer key questions. The study sponsors are Prince George's County, the Maryland Department of Health and Mental Hygiene (DHMH), the University of Maryland Medical System and Dimensions Healthcare System. These parties, plus the University System of Maryland, signed a Memorandum of Understanding in July 2011 to address long-standing challenges and gaps in the health care delivery system and achieve improved health for the County.

The Public Health Impact Study of Prince George's County comes at an early stage in the development of a "strategy to transform the system into an efficient, effective and financially viable healthcare delivery system with a regional medical center," a system that is "supported by a comprehensive ambulatory care network, which will improve the health of residents of the County and Southern Maryland region by providing community-based access to high quality, cost-effective medical care" (from the July 2011 Memorandum of Understanding).

An interdisciplinary team of senior School of Public Health researchers produced the Public Health Impact Study of Prince George's County by building upon existing relevant reports and studies, such as the 2009 Rand report, "Assessing Health and Health Care in Prince George's County," and collecting and analyzing a wealth of new data. Representatives of the study sponsors served on the advisory committee that helped guide the study.

The study team learned from resident experiences; listened to policymakers, County and state leaders and health care providers; and explored and documented best practices from comparable health care systems. The study highlights policy-relevant opportunities, focuses on improving health outcomes, provides regional and sub-county mapping of all categories of primary care providers and assesses County

PRINCE GEORGE'S COUNTY AT A GLANCE

- The nation's most affluent County with an African American majority
- Maryland's most diverse County: "minority" groups account for more than 80 percent of the population (blacks, whites and Hispanics made up 65 percent, 15 percent and 15 percent of the population in 2010, respectively)
- The second most populous County in the state of Maryland (after Montgomery County)
- Home to the University of Maryland, College Park; NASA's Goddard Space Flight Center; Joint Base Andrews (previously Andrews Air Force Base) and USDA's Beltsville Agricultural Research Center
- Bordered by Washington, D.C., and Montgomery, Howard, Anne Arundel, Calvert and Charles counties in Maryland

resident-specific recent hospital discharge and readmission data.

This study adds new information related to:

- how residents use and perceive health care and health issues in the County,
- what works in other model health care systems that can be applied in Prince George's County,
- how state and County leaders and stakeholders perceive what is needed for a new health care system to succeed,
- where there is an inadequate supply of primary care providers and resources,
- what exists in the public health and public sectors to complement the new system, and
- how residents with key chronic health conditions use hospitals in the County and region.

A SNAPSHOT OF FINDINGS FROM THE PUBLIC HEALTH IMPACT STUDY COMPONENTS

The study team used multiple novel and integrated approaches to answer the study's key framing questions and to inform the design of the new system.

The Public Health Impact Study was guided by the need to:

- promote health, prevent disease and support wellness, health equity, health literacy and quality of life in the County,
- address population health broadly, not focus just on those seeking health care, and
- improve the capacity to deliver high-quality primary prevention and health and hospital care.

In the snapshot of our results from each study component we highlight findings that provide new information about health care in the County.

SURVEY OF COUNTY RESIDENTS

We learned from the Random Household Survey of 1,001 County residents (referred to throughout as "the survey") about current use of and attitudes toward health care services and gained an understanding of the factors that drive residents' health care decisions. Key findings include:

- While 75 percent of residents have a "personal doctor," 10 percent of these residents go outside the County to see this provider.
- Of those who use a doctor outside the County, more than 7 percent indicated that their insurance required them to see a physician outside the County, and more than 7 percent reported being unable to get an appointment with a specialist inside the County.

The frequency with which residents use hospitals outside the County remains an even greater issue, and is driven by insurance carriers, provider referrals, availability of specialty care and perceptions of the quality of care at local hospitals. Almost 31 percent of residents who reported using a hospital outside of the County did so because their physician referred them to do so, and 13 percent reported that their insurance coverage dictated their hospital selection. Addressing these issues will require a multi-pronged effort aimed at County residents, health care providers and insurers.

INTERVIEWS WITH STATE, COUNTY AND LOCAL STAKEHOLDERS

The study team conducted 40 personal interviews with key stakeholders. They provided input regarding the current status of the County's health care and recommendations for the design of a new health care system.

The lack of primary care resources and concerns about both the perceptions of quality and the actual quality of the current health care and hospital system emerged as themes. As one stakeholder put it, "Perception becomes reality unless otherwise challenged and the perception is that we don't have a good hospital system, and for some parts, they're right, but there are other parts of the hospital system that ought to be duplicated." Recommendations for the new system included the need for an academic university framework, culturally appropriate health education and prevention, effective branding and centers of excellence among others.

STUDY COMPONENTS

Random survey of 1,001 County residents	Interviews with 40 stakeholders	Analysis and mapping of health care workforce in the County	Analysis of hospital discharge and readmission data	Brief overview of public and private sector resources	Interviews with leaders from 13 health care systems around the U.S.

CATEGORIES OF KEY STAKEHOLDERS

- Policymakers, elected officials and administrators
- Health practitioners
- Academic administrators
- Health system, insurance company and hospital administrators
- Community leaders

HEALTH CARE WORKFORCE ASSESSMENT

The study team cast a wide net to capture existing information and document the capacity of the full range of primary health care workers, including primary care physicians, nurse practitioners, physician assistants, dentists, dental hygienists, social workers, psychologists, therapists/counselors and psychiatrists. We found that there are far fewer primary care providers for the population in Prince George's County compared to that in surrounding jurisdictions. Within the County, there is a need for additional providers within the Beltway and in the southern portion.

OVERVIEW OF PUBLIC HEALTH AND PUBLIC SECTOR HEALTH RESOURCES

We compiled an overview of public health and related facilities and programs that provide health and wellness services for County residents. This overview highlights existing capacity and identifies opportunities to fill gaps and strengthen the health system for County residents, particularly for the underserved.

EXAMINATION OF HOSPITAL DISCHARGES AND READMISSIONS OF COUNTY RESIDENTS

The study team analyzed hospital discharges of County residents for conditions like diabetes, asthma and other chronic diseases to understand the County's overall system of care and resident experiences. We reviewed hospitalizations for conditions that can ideally be managed more effectively outside of a hospital setting. Using County data, we developed an econometric model and found an association between fewer hospitalizations and specific health care providers (those typically focused on care management).

LESSONS FROM OTHER HEALTH CARE SYSTEMS

We conducted interviews with leaders from 13 health care systems around the U.S. From these interviews, we identified the following best practices aimed at achieving integrated, coordinated high-quality care that improves population health and reduces costs. These practices include:

- creating patient-centered, user-friendly and population-focused system goals and values,
- establishing clear and tested metrics for measuring progress and quality of care,
- using information technology systems that reinforce quality assurance and improvement, patient care coordination and use of evidence-based protocols of care,
- focusing on (and creating a culture of) health promotion, disease prevention and care management interventions that are culturally appropriate, enhance health literacy and build upon community-based partnerships with established community programs that educate about and reinforce healthy lifestyles,
- creating and supporting culturally sensitive, innovative, team-based and interprofessional care delivery, including embedding primary care providers in aftercare settings to prevent readmissions,
- investing in building care capacity of primary care physicians, such as strengthening their ability to address co-existing mental health conditions by adding behavioral health providers to the primary care physician teams,
- incorporating a mixture of entities to cover primary and tertiary care, such as community health centers, as well as hospitals, private and non-profit entities and mobile clinics (mix of public and private health systems),
- planning for care strategies to meet the needs of the uninsured and other vulnerable populations, such as the homeless and recent immigrants,
- providing incentives for health care teams to reduce disease rates, and
- developing their own and/or negotiating insurance plan coverage for populations they serve.

These snapshots summarize select findings from our research. It is imperative to go beyond the statistics about gaps in the health care workforce and to understand the complex factors that affect health and health care in the County. For further detail on each study component, please see the extensive technical reports (in Section II), available at *sph.umd.edu/princegeorgeshealth*.

FRAMING QUESTIONS TO INFORM THE PRINCE GEORGE'S COUNTY HEALTH CARE SYSTEM TRANSFORMATION

What are the key health outcomes in the County most amenable to improvement by a new health care system?

What is the geographic distribution of health care resources and where are the areas of greatest need for primary care?

What resources can be mobilized in the public health sector to complement the impact of the health care system?

What are the key issues to maximize uptake and achieve the potential of a health care system for public health?

What elements of a health care system can affect the key health outcomes and by how much?

1. WHAT ARE THE KEY HEALTH OUTCOMES IN THE COUNTY MOST AMENABLE TO IMPROVEMENT BY A NEW HEALTH CARE SYSTEM?

ANSWER Chronic diseases—specifically diabetes, heart disease, hypertension, asthma and cancer—are the health conditions most amenable to improvement by a new health care system in Prince George's County. County residents experience a higher rate of these chronic diseases than those in most of the neighboring counties and in several cases, at a rate higher than the state average. Racial and ethnic differences reveal even greater disparities.

These five chronic conditions are prevalent in the County. Evidence-based interventions are available to prevent these conditions, and to manage them once they are diagnosed. Initiatives using these interventions are under way in the County and state, with a focus on promoting healthy lifestyles. In addition, primary care networks, a component of the new system plans, are designed to coordinate care and manage such conditions.

RATIONALE

Both the State Health Improvement Process (SHIP) and the County's Health Improvement Plan (CHIP) highlight these conditions as ones to be monitored closely. Table 1 provides health outcome rates for the selected chronic conditions. The rate of emergency department visits is used for

TABLE 1 RATE OF EMERGENCY DEPARTMENT (ED) VISITS AND DEATH RATES PER 100,000 PEOPLE FOR SELECTED CHRONIC CONDITIONS IN MARYLAND COUNTIES AND FOR THE STATE (REFERENCE: BASELINE DATA FROM MARYLAND SHIP)

Rate per 100,000	Prince George's County	Montgomery County	Howard County	Anne Arundel County	Maryland
Asthma ED visits*	717.0	406.0	505.4	786.0	850.0
Diabetes ED visits*	308.4	168.8	142.1	315.3	347.4
Hypertension ED visits*	257.7	123.3	117.4	183.8	237.9
Heart disease deaths	224.2	130.2	169.6	198.8	194.0
Cancer deaths	173.8	130.1	161.2	195.2	177.7

*The data for ED visits are limited to Maryland hospitals. Full baseline data should include ED visits of Prince George's County residents to EDs in Washington D.C.

TABLE 2 IMPACT OF LEADING CHRONIC DISEASES ON EMERGENCY DEPARTMENT (ED) VISITS AND DEATH RATES BY RACIAL AND ETHNIC POPULATIONS IN PRINCE GEORGE'S COUNTY

Health Outcome	Measure (per 100,000 population)	Entire County Baseline Rate per 100,000	Rate per 100,000 by Racial/Ethnic Group in County			
			White Rate	Black Rate	Hispanic Rate	Asian Rate
Asthma	Rate of ED visits for asthma*	717.0	258.0	909.0	305.0	177.0
Diabetes	Rate of ED visits for diabetes*	308.4	179.5	388.2	101.6	N/A
Hypertension	Rate of ED visits for hypertension*	257.7	101.8	341.7	54.3	67.6
Heart disease	Rate of heart disease deaths	224.2	187.5	271.5	66.4	96.0
Cancer	Rate of cancer deaths	173.8	157.0	194.5	70.9	87.0

*The data for ED visits are limited to Maryland hospitals. Full baseline data should include ED visits of Prince George's County residents to EDs in Washington D.C.

these conditions because the evidence suggests that these visits could have been prevented with well-coordinated primary care in the County. Additionally, we examine death rates for two conditions, heart disease and cancer, which are leading causes of death in the County and state.

While the overall health measures for several of these conditions appear to be better than that for the state as a whole, the rates for racial and ethnic County populations (see Table 2) provide the imperative for the new system. Rates for blacks exceed rates for whites for all conditions. Emergency department visits by blacks are more than three times higher for asthma and hypertension and nearly twice as high for diabetes than for whites. Addressing the underlying causes for these and other differences is needed to improve the County's health outcomes.

County residents identified the five key chronic conditions among those they viewed as the most critical ones to address. However, almost 16 percent of residents did not know which health conditions were urgent, indicating a need to inform residents of prevalent conditions and of how to prevent and manage them.

The survey gathered more specific information about residents' experiences with chronic diseases. More than a third (37 percent) of the residents responded that their doctor or a health care professional had told them that they have a medical condition or chronic disease. When asked which conditions they were diagnosed with, residents noted the five key health conditions among their top listed diagnoses (see Table 3).

We were further interested in diagnoses of two key conditions that can contribute to significant morbidity and mortality of these key health conditions if they are not addressed. When asked if they ever had been told by a doctor or other health care professional that they have pre-diabetes or borderline diabetes, 17 percent reported being diagnosed with pre-diabetes. Similarly,

TABLE 3 DIAGNOSED MEDICAL CONDITIONS FOR RESIDENTS WHO HAVE BEEN TOLD BY THEIR DOCTOR THEY HAVE A MEDICAL CONDITION OR CHRONIC DISEASE

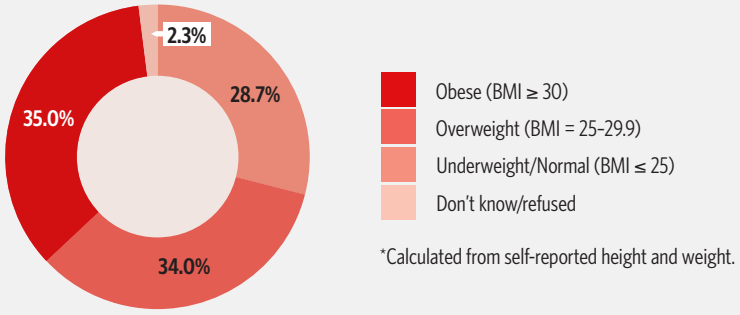
Condition	Percent
High blood pressure/hypertension	5.5
Diabetes	3.7
Asthma	3.3
Heart disease	2.6
High cholesterol	2.6
Cancer	2.3
Chronic arthritis	2.0
Thyroid problem/Hypothyroidism	1.7
Mental illness	1.4
Chronic bronchitis	1.0

Note: To estimate the most appropriate prevalence for the County, we adjusted the results from that sub-sample of 423 to the entire sample.

when asked if a doctor or other health care professional had told them that they have pre-hypertension or borderline high blood pressure, 33 percent reported pre-hypertension.

County residents are at greater risk for these chronic disease conditions due to contributing factors such as tobacco use and obesity. More than 11 percent reported daily use of cigarettes while 6 percent reported smoking cigarettes between one and 29 days a month. Body Mass Index, a calculation using a person's height and weight, is also an important indicator of chronic disease risk. We found that 34 percent of County residents are overweight and 35 percent are obese by using this measure (see Figure 1).

FIGURE 1 BODY MASS INDEX OF SURVEYED COUNTY RESIDENTS*



*Calculated from self-reported height and weight.

A new health care system that incorporates efforts aimed at addressing and preventing these and other risk factors will further contribute to improvements in these chronic conditions.

2. WHAT IS THE GEOGRAPHIC DISTRIBUTION OF HEALTH CARE RESOURCES AND WHERE ARE THE AREAS OF GREATEST NEED FOR PRIMARY CARE?

ANSWER The County has a substantially lower ratio of primary care providers to the population compared to surrounding counties and the state. The areas of highest primary care need are within the Beltway and in the southern region of the County. An additional 61 primary care physicians (13 percent increase) and 31 dentists (7 percent increase) are needed to meet the minimum recommended ratios in these areas.

We reviewed the geographic distribution of primary health care resources at the County and two sub-county levels. There are fewer providers for the population for each medical, dental and mental health primary care category compared to surrounding counties. In addition, there are sub-county areas where this ratio appears worse than the ratio used by the federal government to designate Health Professional Shortage Areas. For primary care physicians, four of the County's seven Public Use Microdata Areas (PUMAs) have provider-to-population ratios that meet the federal criteria for primary care physician shortages. For dentists, two PUMAs have ratios that meet the criteria for dentist shortages. We identified geographic primary care need by ZIP code using several measures. We looked at the ratio of primary care physicians to the population and found that nearly half of County residents live in areas that have a sufficient number of primary care physicians, while a third live in areas where there is a high need for these providers. For a more specific look at geographic need for primary care, we included population characteristics and hospital use patterns in addition to physician count. Using this approach, we found seven ZIP codes have high primary care need, representing 16 percent of County residents.

RATIONALE

We used a variety of approaches to review County and sub-county geographic areas of need for primary care. One approach uses the ratio of health care providers to the population.

Another approach adds population and hospital event characteristics to that of provider information.

ANALYSIS BY PRIMARY CARE PROVIDER CATEGORIES

We closely examined physician availability and capacity, and also reviewed the full array of primary care providers, including nine groups that represent three major categories of primary care providers: medical (primary care physicians, nurse practitioners, physician assistants); dental (dentists, dental hygienists); and mental (clinical social workers, psychologists, therapists/counselors, psychiatrists).

Databases for active licensed providers were obtained from the respective DHMH licensing boards. For all provider groups, except for physicians, counts were based on their practice location and no adjustments were made for specialty focus. We only counted licensed, board-certified primary care physicians who report providing patient care for 20 hours or more per week in a practice in the County. The County has 465 primary care physicians, which results in 54 primary care physicians per 100,000 people (1:1,851). When pediatricians alone are reviewed, the ratio is 39 per 100,000 children up to age 18 (1:2,564). More of the County's primary care physicians (42 percent) are involved only in patient care, compared with primary care physicians (37 percent) in the state as a whole. Fewer County primary care physicians reported being involved in teaching (21 percent vs. 30 percent) and research (6 percent vs. 10 percent) compared with those in the state.

A review of provider-to-population ratios for each category of primary care provider is shown on Table 4. The supply of health care providers for Prince George's County is far below that of other jurisdictions, and for the state as a whole, for every provider group.

PRIMARY CARE WORKFORCE NEED BY SUB-COUNTY GEOGRAPHIC AREA

To gain a better understanding of which areas of the County are served adequately, we looked at provider-to-population ratios for each category of providers, and compared them to the Health Resources and Services Administration's (HRSA) criteria used to designate Health Professionals Shortage Areas (HPSAs) for those categories.

PRIMARY CARE PHYSICIAN-TO-POPULATION RATIOS BY ZIP CODE

One condition used by HRSA to designate an area as a medical HPSA is a primary care physician-to-population ratio of 1:3,500 or worse, while a ratio of 1:2,000 is deemed sufficient. Map A highlights for each County ZIP code in which three categories of ratios are met: those that meet the recommended ratios for primary care physicians per 100,000 population

TABLE 4 THE RATIO OF MEDICAL, DENTAL AND MENTAL HEALTH PROVIDERS PER 100,000 POPULATION IN MARYLAND COUNTIES AND FOR THE STATE

	Medical Care			Dental Care		Mental Health Care			
Jurisdiction	Primary Care Physician*	Physician Assistant	Nurse Practitioner	Dentist	Dental Hygienist	Social Worker	Counselor	Psychologist	Psychiatrist
Prince George's	53.9	39.0	24.2	54.4	17.1	45.9	42.2	13.2	3.6
Anne Arundel	65.7	70.3	64.5	63.1	57.8	78.5	56.4	27.5	3.9
Baltimore County	112.9	115.3	77.3	78.8	48.3	137.8	94.5	47.3	22.4
Howard	77.0	70.7	96.5	123.7	75.9	173.8	78.7	99.6	17.1
Montgomery	94.6	73.0	47.0	123	38.6	146.4	51.7	85.7	18.0
Maryland	84.5	79.0	51.5	71.4	43.8	99.23	68.76	40.37	11.8

*Primary care physicians include specialists in pediatrics, family medicine, internal medicine and obstetrics and gynecology.

(green), those that reflect a shortage (red) and those that fall in between (yellow). Almost half (46 percent) of County residents live in areas that have a sufficient number of primary care physicians, while a third (34 percent) of the residents live in areas where there is a high need for these providers.

TABLE 5 CURRENT COUNTS AND ESTIMATED ADDITIONAL NEEDED PRIMARY CARE MEDICAL, DENTAL AND CORE MENTAL HEALTH PROVIDERS BY PUMA BASED ON PROPOSED SUFFICIENT PROVIDER-TO-POPULATION RATIOS

	Physicians		Dentists		Core Mental Health*	
Region	Count	Additional Needed	Count	Additional Needed	Count	Additional Needed
Inside Beltway						
PUMA 1	37	15	57	—	85	—
PUMA 3	34	13	21	10	56	—
PUMA 4	35	22	17	21	75	—
PUMA 7	62	—	43	—	36	—
Outside Beltway						
PUMA 2	102	—	85	—	184	—
PUMA 5	128	—	151	—	274	—
PUMA 6	67	11	96	—	195	—
Total	456	+61	470	+31	905	—

*Includes Clinical Social Workers, Psychologists, Counselors and Psychiatrists

PRIMARY CARE PROVIDERS-TO-POPULATION RATIOS BY PUMA

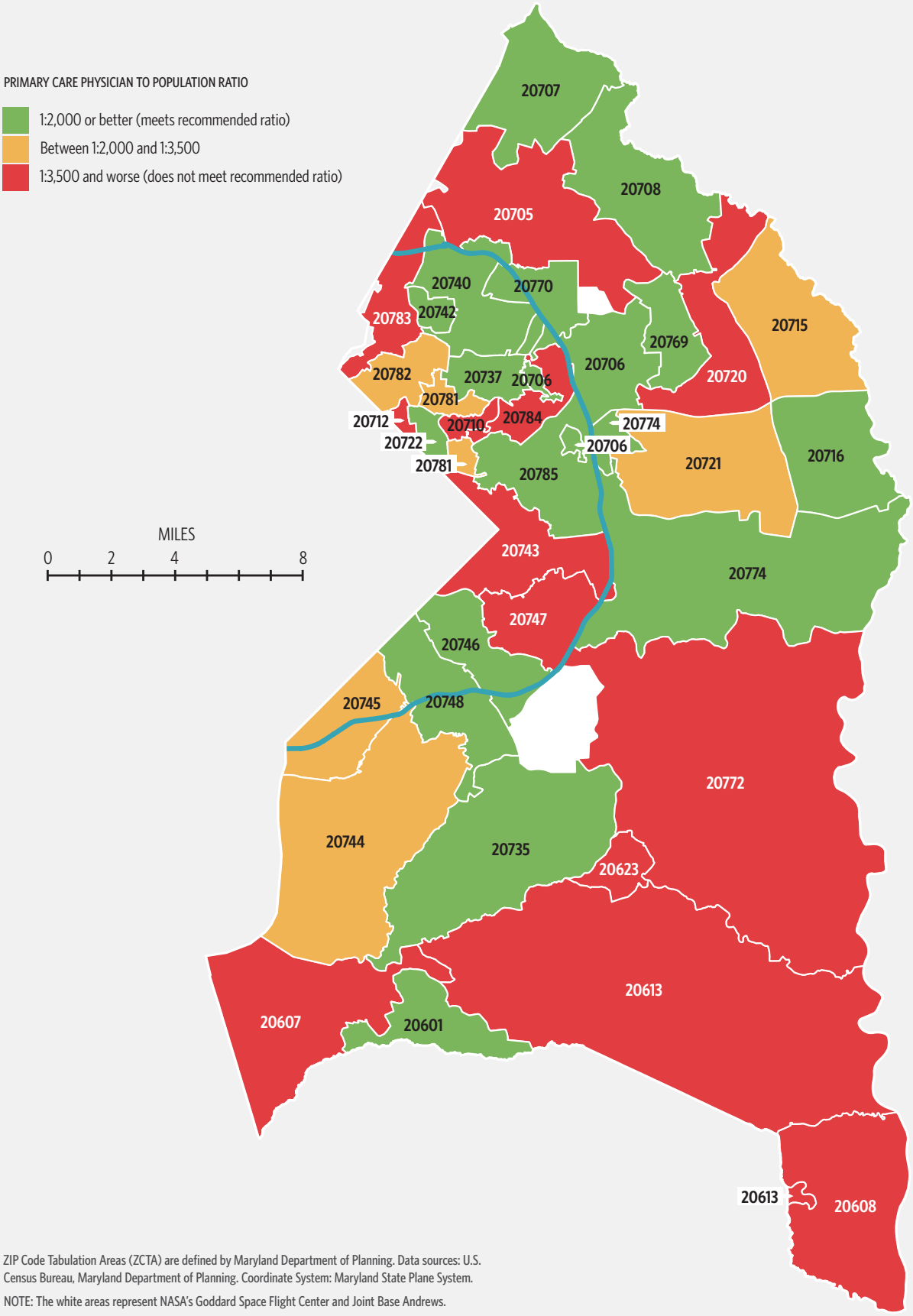
We used the County's PUMAs to designate sub-county geographic areas. The County has seven PUMAs, each reflecting populations about 100,000. Based on the provider counts in each of the three primary care categories, and the ratio of these providers to the population, we identified PUMAs with sufficient providers and those that do not meet HRSA ratios for sufficient providers. These ratios include 1:2000 for physicians, 1:3,000 for dentists and 1:10,000 for core mental health providers. Table 5 provides current counts and additional estimated counts needed for each category by PUMA.

Using this approach, we found that several PUMAs need additional primary care physicians and dentists to reach a sufficient provider-to-population ratio. We estimate that the County needs to increase the number of primary care physicians by 61 (about 13 percent) to meet the sufficient provider-to-population ratio. Most of the PUMAs within the Beltway and one PUMA outside the Beltway would benefit from additional physicians. Two PUMAs within the Beltway would also benefit from additional dentists, which translates to 31 dentists (about a 7 percent needed increase). While the ratio of core mental health providers to population for each PUMA appears sufficient, the count of providers per PUMA is substantially lower in the PUMAs inside the Beltway than outside. If psychiatrists alone are used to estimate capacity for mental health care, we estimate the County would need to double the number of psychiatrists. A more detailed review of the County's mental health providers would allow for a better assessment of the capacity of this workforce category.

ZIP CODE-LEVEL ANALYSIS OF HIGH PRIMARY CARE NEED

This assessment complements the ZIP code area assessment of the primary care physician to population ratios (Map A). We developed an algorithm to identify ZIP codes where residents may be at higher need for primary care services, using provider, population and hospitalization data. We reviewed population income and education data since poor health status is associated with low income and low education status. We examined the pattern of hospital events by ZIP code, using the ratio of hospital discharges for preventable conditions and 30-day readmissions. Hospital readmissions within a 30-day period after discharge are viewed as a reflection of insufficient treatment to resolve the health condition in the prior hospitalization or the lack of appropriate primary care and home care. For hospital discharges, we looked specifically at conditions associated with the chronic diseases and conditions identified as being most

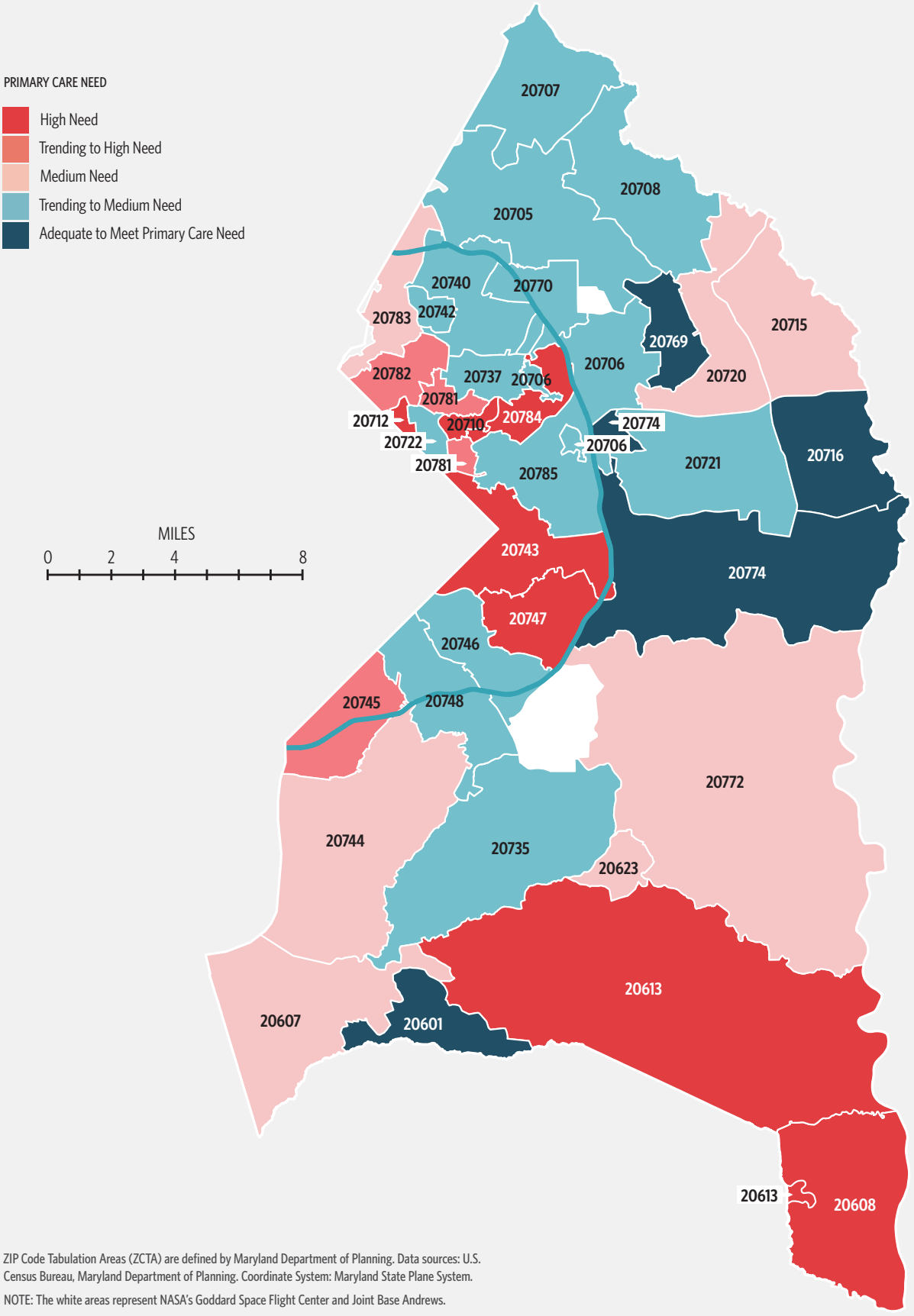
MAP A **PRIMARY CARE PHYSICIAN-TO-POPULATION RATIO BY ZIP CODE IN PRINCE GEORGE'S COUNTY**



ZIP Code Tabulation Areas (ZCTA) are defined by Maryland Department of Planning. Data sources: U.S. Census Bureau, Maryland Department of Planning. Coordinate System: Maryland State Plane System.

NOTE: The white areas represent NASA's Goddard Space Flight Center and Joint Base Andrews.

MAP B **ZIP CODE-LEVEL ANALYSIS OF PRIMARY CARE NEED IN PRINCE GEORGE'S COUNTY**



ZIP Code Tabulation Areas (ZCTA) are defined by Maryland Department of Planning. Data sources: U.S. Census Bureau, Maryland Department of Planning. Coordinate System: Maryland State Plane System.

NOTE: The white areas represent NASA's Goddard Space Flight Center and Joint Base Andrews.

amenable for improvement with a new health care system.

We defined areas of high-primary care need as those that meet *each* of three criteria:

- primary care physician-to-population ratio at or worse than 1:3,500,
- a population with a median income and/or education level lower than the County average, and
- a population whose 30-day readmission ratio and/or hospital discharge ratio is higher than the County average (2007–2009 data).

Map B provides a visual of several levels of primary care need, ranging from high need for primary care (red) to adequate primary care (blue) with levels in between. Using this approach, the County has seven ZIP code areas with high need for primary care. These areas represent about 16 percent of the County's population. Several of these ZIP codes include an existing federally designated medically underserved population. We also identified additional levels of risk by identifying ZIP codes that meet the same population and hospital event criteria, but with a marginal provider-to-population ratio (worse than the recommended 1:2,000, but better than 1:3,500). These are designated "trending to high need." ZIP code areas with the latter provider-to-population ratio, but that have either the population or hospital event characteristics are designated as areas with medium need. The light blue areas reflect some need for primary care. This assessment adds an additional dimension of primary care need to that of the provider-to-population ratios in the County.

3. WHAT RESOURCES CAN BE MOBILIZED IN THE PUBLIC HEALTH SECTOR TO COMPLEMENT THE IMPACT OF THE HEALTH CARE SYSTEM?

ANSWER Integrating primary care and public health can link programs and activities to "promote overall efficiency and effectiveness and achieve gains in population health" (IOM, 2012). We used secondary data to identify the presence and range of services provided by programs serving County residents, with a focus on vulnerable populations throughout the life span.

The County's resources include:

- public health and social services;
- behavioral/mental and dental health programs;
- community-based primary care clinics;
- long-term care facilities;
- health programs in public schools; and
- other partners such as Parks and Recreation, the University of Maryland Extension and hospital-sponsored programs

County-led efforts to improve the public's health and expand access to primary care will complement the impact of a new health care system. Achievement of the County's 2020 goal of an accredited health department will ensure that the basic public health functions of assessment, assurance and policy development are in place. These functions can contribute to effective integration of programs within the County's public health sector, collaborative efforts among hospitals to address community benefit programs and the integration of public health programs with primary care. Also the County is in a position to take advantage of the ACA provisions to enhance its safety net clinic capacity and extend facilities such the School-based Wellness Centers. The County's public sector and academic programs are additional assets that support health and wellness of residents. The County's Health Care Coalition formed during the Baker administration provides an important foundation on which to build strong partnerships among public health, primary care and medical center programs and to create a more integrated system of care.

RATIONALE

Improving health outcomes requires building upon the existing assets within the County. We describe selected resources and the opportunities and challenges inherent in integrating them into a broader health system.

PRINCE GEORGE'S COUNTY HEALTH DEPARTMENT

The Health Department provides general screening and referral programs, health education and counseling services, and about a third of the locations provide clinical care. Realizing the County Health Improvement Plan's goal of achieving an accredited health department in 2020 will be a major asset for the County. With the capacity to provide the essential public health services of assessment, assurance and policy development, the County Health Department will be in a position to facilitate effective partnerships and tailor public health resources to meet population needs.

Our study of health care systems reveals that public health departments and Federally Qualified Health Centers were mentioned most often as potential public health resources that can be mobilized to complement the health care system's impact on health outcomes. Despite lack of adequate funding for health departments, creative ideas for mobilizing public health resources should be considered when designing the new health system. One example includes creating a state health department-sponsored chronic care initiative where insurers are required to participate in an integrated, collaborative system or community coalition with community health centers.

COMMUNITY-BASED PRIMARY CARE CLINICS

The County's capacity of community-based primary care, including the safety net clinics, remains severely limited. These programs serve a critical role in the health care delivery system, and provide primary care health services to vulnerable and uninsured or underinsured populations. Federal designation of Medically Underserved Areas (MUA) and Medically Underserved Populations (MUP) and designation of Health Professional Shortage Areas (HPSAs) identify areas of high need. These designations allow communities to request providers through the National Health Service Corps and establish of certification of facilities such as Federally Qualified Health Centers (FQHCs) or FQHC "look-alike" centers. The County has eight MUAs or MUPs, and is the only County in the state with multiple MUPs. The County has only one well-established FQHC—Greater Baden Medical Services—that has multiple locations. In addition, two other FQHCs, Mary's Center and Community Clinic Inc. have recently established clinical sites within the County. The health care systems we interviewed highlighted the importance of FQHCs in providing primary care to underserved populations. The ACA contains provisions to expand FQHCs. Given the magnitude of the uninsured population in the County, it is clear that resources must be invested into expanding community health centers.

HOSPITAL COMMUNITY BENEFIT PROGRAMS

The County hospitals are in a position to enhance community-based activities in partnership with the public health sector. Community Benefit Reports are collected from state hospitals by the Health Services Cost Review Commission (HSCRC) to determine the hospital's tax-exempt status. Community benefit is defined by the Maryland law as "an activity that is intended to address community needs and priorities primarily through disease prevention and improvement of health status, including: health services provided to vulnerable or underserved populations; financial or in-kind support of public health programs; donations of funds, property, or other resources that contribute to a community priority; health care cost containment activities; and health education screening and prevention services (HSCRC, 2011)." Currently, the ACA requires every hospital to conduct a community health needs assessment at least once every three years to maintain its tax-exempt status and avoid an annual penalty. The County would benefit from coordinated efforts among the hospitals to conduct needs assessments and to develop subsequent targeted community-based programs.

BEHAVIORAL AND MENTAL HEALTH SERVICES

The County Health Improvement Plan (CHIP) highlights the need for additional behavioral and mental health services, which are an essential part of primary care. The County's Department of Family Services, Mental Health and Disabilities Division provides leadership for an array of high-quality public mental health services, oversees all public mental health services and monitors the mental health programs and professionals in this system. In addition, the County's Department of Health and safety net facilities

provide behavioral and/or mental health services, as do several non-governmental entities. Behavioral and mental health programs are available in all hospitals and services are provided by private sector practitioners. A targeted review of the integration and capacity of the County's mental health services would be beneficial.

PRINCE GEORGE'S COUNTY DENTAL HEALTH SERVICES AND PROGRAMS

Dental care is another essential primary care service that requires a more targeted review. The County Health Department, professional organizations and practicing dental professionals provide select programs. There has been significant activity since the death of 12-year-old Deamonte Driver, a County boy who died in 2007 due to complications from untreated tooth decay. However, there is still a major need for resources to provide evidence-based preventive and health promotion services and programs to the dentally uninsured and underinsured in the County.

PRINCE GEORGE'S COUNTY PUBLIC SCHOOLS

Public schools traditionally have contributed to the health education of children and youth and provided or contracted for basic health care services as needed for children while they are in school. Schools provide a natural link between families and teachers, communities and the public education system. Many County schools have access to a registered school nurse, and several have additional providers such as psychologists, speech pathologists and occupational therapists. All schools are part of the Alliance for a Healthier Generation sponsored by the American Heart Association, the Michael and Susan Dell Foundation and the Clinton Foundation. There are four School-based Wellness Centers managed by the County Health Department located in high schools. Opportunities to extend these and initiate other school-based health centers would provide additional support for the County's residents.

NURSING HOMES AND HOME HEALTH CENTERS

Nursing homes and home health centers provide institutional and home-based services for the elderly and for special needs populations. There are 20 nursing home facilities in the County, which include respite and rehabilitative services and outpatient rehabilitative services. Home health centers provide nursing services, home health aides and one or more other services such as physical therapy, occupational therapy and social services. There are opportunities for the County to look at federal options to support innovative programs for special need populations.

PROGRAMS THAT SUPPORT HEALTH PROMOTION

Prince George's County Parks and Recreation offers residents vast parkland and community centers. These centers provide a health improvement programs, such as fitness centers and nutrition and cooking classes, and offer a significant opportunity for the provision of clinical services. Many of these centers are located at or near schools and could be linked with School-based Wellness Centers or community health centers. The University of Maryland Extension (UME)-Prince George's County implements programs that address obesity; food insecurity; low levels of fitness; unhealthy diets for youth, families and senior citizens; sustainable agriculture; school and community gardens; and outdoor education. UME collaborates with many organizations throughout the County, including the school and library systems, municipal and County government and County Health Department, and programs such as Head Start and Judith P. Hoyer Early Child Care and Family Education Centers.

HIGHER EDUCATION HEALTH-RELATED ACADEMIC RESOURCES IN THE COUNTY

The County has a number of higher education academic resources that contribute to health and wellness capacity through their continuing education, research, community outreach and student training programs. Health workforce training opportunities include Bowie State University's nursing program, Prince George's Community College's Academy of Health Sciences and the University of Maryland's School of Public Health and other academic programs that train public health providers, couple and family therapists, experts in physical activity, clinical psychologists and others. In addition, health professions students from University of Maryland, Baltimore rotate through sites in the County as part of their training. The health care systems we interviewed had two innovative programs that could serve as models. One involved a partnership between the academic health care system and

a community-based clinic to establish a "medical home" with case managers for the under- and uninsured, achieving cost savings and improvements in quality of care. Another system formed a communitywide "Nurse Advice Line" in collaboration with the public health department, managed care organizations and the university. This Nurse Advice Line helped the state health department identify illnesses statewide and resulted in decreased emergency department visits, increased use of medical homes and better coordination of patient care.

4. WHAT ARE THE KEY ISSUES TO MAXIMIZE UPTAKE AND ACHIEVE THE POTENTIAL OF A HEALTH CARE SYSTEM FOR PUBLIC HEALTH?

ANSWER Decisions about where to seek care are generally driven by individuals, but the extent to which insurance and provider referral practices influence these choices is critically important. County residents and key stakeholders alike identified key issues that would influence the use and success of a health care system for public health. They highlighted the importance of affiliation with academic institutions, the role of insurance policies and practices, perceptions of health care quality, provision of health and wellness services, addressing health literacy and cultural competence, availability of primary care (both facilities and a sufficient workforce), effective design and use of technologies such as health information systems and system branding. The leaders we interviewed from the comparable models assessment also mentioned these issues.

Maximizing uptake will require system improvements that include needed services and those valued by residents, changes in insurer policies and provider referral practices, careful consideration of location, and a major focus on quality of care. The potential to significantly improve how County residents perceive the health care system would be enhanced by the affiliation with an academic institution. As these improvements are implemented, ongoing communication with the public, health care providers and policymakers will be essential.

RATIONALE

We found the following to be key factors influencing consumer choice and the potential success of a new health care system.

AFFILIATION WITH AN ACADEMIC MEDICAL CENTER

Stakeholder interviews focused on a new system that would be affiliated with an academic institution, including a medical school and teaching hospital. A teaching hospital would increase the status of the health care services, improve quality of care provided by physicians and compete with the university-based health care available in Washington, D.C. Leaders from model health care organizations also identified the university affiliation as one strategy for enhancing perceived and actual quality.

INSURANCE AND PROVIDER REFERRAL PRACTICES

Physician referral practices and health insurance options and policies are other critical issues that impact

residents' choice of hospital. In the household survey, 85 percent indicated they were very likely to use a new hospital if their insurance company allowed its use. With regard to their most recent hospitalization, 31 percent of residents reported that their providers referred them to a hospital outside the County, and 13 percent reported that their insurer required use of a hospital outside the County. In the stakeholder interviews, this issue arose as well, including reference to Prince George's County employees whose health insurance carrier requires them to leave the County for hospitalization.

REPUTATION AND QUALITY OF CARE

Reputation and perceived excellence of a health care system are two key factors that contribute to maximizing the uptake of the system's services. Key stakeholder interview data showed that it is the reputation of the current health care in the County, and not always the actual care, that turns residents away or encourages physicians to make out-of-County referrals. In the random household survey, the reputation and perceived quality of hospitals were factors associated with the choice to leave the County for hospitalization. Additionally, when asked their choice of hospital, residents selected those outside the County. This again reflects general stakeholder opinion, which is that there is a perception problem that has impacted use.

When residents were asked what would make them more likely to use a new hospital in the County, they identified high-quality care, the availability of specialist care and referrals from their family and peer network, with 90 percent of residents considering quality of care the most important factor. Stakeholders emphasized the concept of building a "world-class facility," along with centers of excellence that specialize in certain chronic diseases, as very important. Survey results demonstrated that residents do and will seek care at a hospital, often despite location, if it is associated with excellent care. The new system would be successful in a competitive market if it could build excellence in areas critically important to the County and provide distinctive programs.

Attention to quality of care can draw residents back to the County for health care and influence physicians to keep referrals in the County for specialized services. While several stakeholders believed that the poor reputation is in perception only, all acknowledged that perception is reality when it comes to health care decisions.

PERCEPTIONS OF AREA HOSPITALS

Despite perception challenges, over 40 percent of residents believe that quality of service at the hospital closest to them was excellent or very good and 24 percent rated the care as good. We asked residents about which hospitals they would chose for different conditions and found perceptions varied. Interestingly, while Doctors Community Hospital was ranked highest among area hospitals for overall best quality (16 percent), it was not the first choice for general hospitalization. Conversely, Washington Hospital Center was the first choice for general hospitalization with 15 percent and 11 percent of residents identifying it for overall best quality.

For the two hospitals associated with Dimensions Healthcare System, opinions varied significantly. More than 47 percent had favorable opinions about Prince George's Hospital Center, while 40 percent of residents reported unfavorable opinions. With Laurel Regional Hospital, however, the issue was less that it was viewed unfavorably than it was not well known. Fifty percent viewed it favorably, but 13 percent had never heard of it and more than 20 percent had no opinion. In each case, more than 30 percent of residents indicated that increasing the quality of staff and physicians would improve their perceptions of each hospital.

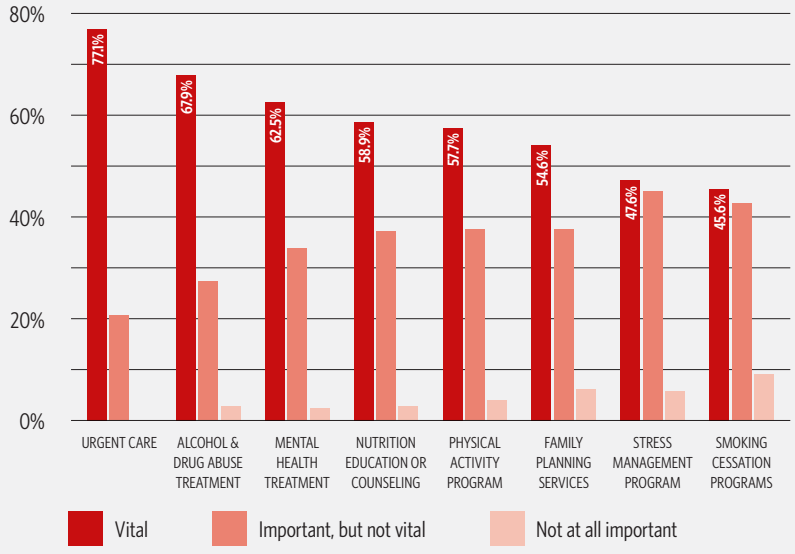
INTEGRATION OF WELLNESS AND DISEASE PREVENTION EFFORTS

The integration of health promotion and disease prevention services into the new system could enhance the likelihood of making an impact on health status at the County level and attract residents. The survey showed strong interest in several of these services (see Figure 2). Stakeholder interviews support these findings. Given the focus on prevention in the ACA, along with the County's Health Improvement Plan, these services could prove integral to the public health impact of the new health care system.

CULTURAL COMPETENCY AND HEALTH LITERACY

In a County as diverse as Prince George's, the new system has the unique potential to become known as a culturally competent health care system that addresses the health literacy needs of the communities it serves. More than a quarter of the residents surveyed needed some level of help reading medical materials, and 23 percent had some problems learning about their medical conditions due to difficulty understanding written information. Similarly, only 48 percent of residents whose primary language

FIGURE 2 COUNTY RESIDENTS' PERCEPTIONS OF SERVICES FOR A NEW HEALTH CARE SYSTEM IN PLANNING A NEW HEALTH CARE SYSTEM FOR THE COUNTY, DECISIONS HAVE TO BE MADE ABOUT WHAT SERVICES ARE VITAL TO THE COMMUNITY. BASED ON YOUR EXPERIENCES AND THE EXPERIENCES OF YOUR FAMILY, PLEASE TELL ME IF THE AVAILABILITY OF (INSERT SERVICE) IS VITAL, IMPORTANT BUT NOT VITAL, OR NOT AT ALL IMPORTANT TO HAVE IN PRINCE GEORGE'S COUNTY? (N=1,001)



was not English reported having access to a provider who spoke their language, and only 21 percent reported having an interpreter. One mark of distinction for the new health care system could be a large and mobile translator/interpreter program, and health education materials that are culturally sensitive and language appropriate. Stakeholders and other interviewees also suggested developing patient navigator and community outreach worker programs.

RECRUITMENT AND RETENTION OF HEALTH CARE PROVIDERS

Recruitment and retention of qualified primary care and specialty physicians is needed to fill the current gaps in quantity, type and prestige of physician working in the County. The new health care system can begin to fill these gaps by considering part-time appointments for well-known providers from surrounding jurisdictions. Providing incentives to medical school and other health professions graduates through existing federal loan repayment plans, coupled with potential economic incentives, such as low-interest mortgages, could assist in attracting providers to practice in the County. Enhancing the quality of other staff in the system can also impact perceptions of care.

LOCATION AND ACCESSIBILITY OF CARE

Location of care is a factor that contributes to use of services. When asked to identify their top three priorities for deciding where to seek care, more than 51 percent of residents surveyed indicated that a priority was whether the facility or doctor was close to home. The usage of the new system will be similarly affected by accessibility of care: hours of operation, ease of getting appointments and availability of specialist care.

In the survey, we asked about different health care services and how vital they are for residents. More than 77 percent reported that urgent care services were a vital need for Prince George's County. This type of service reflects care that is readily and routinely available at the time of need.

CAPACITY OF HEALTH INFORMATION TECHNOLOGY

The capacity and appropriate use of health information technology supports the success of a system for public health. The County's physicians and facilities are moving to adopt such technology, which ultimately would integrate care across systems, deliver decision support systems for providers to implement evidence-based protocols and contribute to population health. In our interviews with model systems, some said they use automated reminders that prompt providers about care needs and milestones, contributing to better health outcomes.

BRAND MARKETING

Effective marketing and positive branding of a health care system also contribute to increased uptake. Individuals need to be informed of the availability and unique types of services in a targeted way that is sensitive to cultural and language differences. From interviews with individuals in other model systems, it is clear that a communication campaign must "sell" excellent services and quality and the image that the system serves more than uninsured or the poor. Involvement of residents in deciding a campaign strategy and messages would enhance its credibility and effectiveness. This is an ongoing process, similar to the communication

campaigns used by Holy Cross, Adventist and Doctors Community hospitals, which include mailings to Prince George's County households. Additionally, the careful use of community benefit funds can enhance health and also raise visibility of the system while providing necessary services, such as health fairs and health promotion programs. Marketing and communication to providers are also critical, particularly as they will need to understand and appreciate the breadth and quality of the new system in order to refer their patients to the system.

5. WHAT ELEMENTS OF A HEALTH CARE SYSTEM (HOSPITAL AND COMMUNITY) CAN AFFECT THE KEY HEALTH OUTCOMES AND BY HOW MUCH?

ANSWER Prince George's County can make significant strides in improving the health of residents with a new health care system committed to population health and prevention that includes a high-quality regional hospital center affiliated with a university, a strong primary care network and integrated public health services. The establishment of such a transformative system would enhance the health of a County with major health needs and create a model for the nation.

In addition, we forecast achievable 2020 health outcome targets for the County of a system with these elements. We estimate the resulting improvements in asthma, diabetes, hypertension, heart disease and cancer through effective prevention and management would be reflected in reductions in ED visits and deaths in 2020 and for each subsequent year. We forecast for 2020 a 16 percent reduction in cumulative emergency department visits for asthma, diabetes and hypertension and 340 lives saved that would have been lost due to heart disease or cancer.

RATIONALE

Lessons learned by model health systems, input from key stakeholders and residents, and findings from the scientific literature reveal system elements and practices that contribute to health improvements and health care efficiencies.

A university-affiliated regional teaching hospital center involved in interprofessional education, care and research would provide an anchor for a revitalized high-quality health care system in Prince George's County. As the anchor, the hospital center would:

- apply the latest technologies and knowledge to improve health and restore function,
- use interprofessional, team-based approaches to provide sustainable gains in health, and
- partner with primary care for effective care management of chronic diseases.

These attributes would:

- attract and retain high-quality health care providers,
- earn the trust of residents who now seek care outside the County, and
- earn the trust of providers and insurance companies that now refer residents elsewhere.

Strong primary care networks are associated with higher quality of care, lower health care spending and reduced health disparities. The creation of a strong primary care network in the County would require:

- increasing the number of primary care practitioners to address the identified shortages,
- increasing the number of ambulatory care centers in targeted areas of the County,
- empowering primary care through the adoption of the "medical home" model and access on nights and weekends,
- integrating primary care with dental health and behavioral/mental health,
- assuring connectivity through health information technology,
- measuring the quality of care through regular reporting, and
- collaborating closely with the public health system.

TABLE 6 ESTIMATED 2020 ACHIEVABLE COUNTY TARGETS AND IMPLICATIONS FOR KEY HEALTH CONDITIONS

Health Condition and Measure (per 100,000 population)	County Baseline Total	County Target Total Achievable by 2020 (estimated % percent decrease from baseline)	Implications (as ED visits averted or lives saved annually)
Asthma—Rate of ED visits for asthma*	717.0	573.6 (20%)	1,233 ED visits averted
Diabetes—Rate of ED visits for diabetes*	308.4	277.6 (10%)	265 ED visits averted
Hypertension—Rate of ED visits for hypertension*	257.7	231.9 (10%)	222 ED visits averted
Heart disease—Rate of heart disease deathsn	224.2	201.8 (10%)	193 lives saved
Cancer—Rate of cancer deaths	173.8	156.4 (10%)	150 lives saved

*The data for ED visits are limited to Maryland hospitals. Full baseline data should include ED visits of Prince George's County residents to EDs in Washington D.C.

The interface of the primary care network and the hospital with the public health sector contributes to improved health outcomes and population health. Key aspects of an integrated public health system include:

- primary disease prevention—such as health promotion activities like health education, support for healthy lifestyles and the incorporation of health literacy principles,
- appropriate integration among public health sector community-based programs, and
- integration and coordination of services that cross sectors, such as health and social services playing a key role in affecting health outcomes.

To estimate how much the new system as described would affect key health outcomes, we used our study findings and reviewed the relevant literature, ongoing and planned County and state activities and the County's baseline data. We realize that several of the key elements of the new system will not be in place until 2014 or thereafter. Table 6 presents the County target that should be achievable by 2020 with a new system in place for each of the key health outcomes, holding population constant.

Even with this conservative approach, we estimate these improvements would result in a collective reduction of emergency department (ED) visits for asthma, diabetes and hypertension by about 16 percent each year. With a strong primary care network and the use of evidence-based interventions, even greater benefits should be achievable. A review of studies of care management approaches for chronic conditions revealed a range of interventions that decrease health care utilization and increase cost savings. For example, some studies have shown a significant reduction in asthma-related ED visits with in-person care management. Both in-person and telephone-based care management studies found similar results for patients with diabetes, including a telephone care management study that found more than 30 percent reductions in ED visits and inpatient admissions (AHRQ, 2012b).

For heart disease and cancer deaths, we estimate that a 10 percent reduction is achievable by 2020. This would equate to more than 340 lives saved each year, with potential for an even greater number of lives saved in each subsequent year. The collective and coordinated efforts of the primary care network and public health sector in reducing risk factors for all five of these health outcomes, and attention to the relevant social determinants of health, could add to the rates of improvement.

The ACA has specified innovations and initiatives that are already contributing to each of the elements of the new health care system. Maryland is taking actions that will further support improvements in the County, such as the formation of the Maryland Health Benefit Exchange that will extend insurance coverage and the creation of Health Enterprise Zone to reduce disparities, improve health outcomes and reduce health care costs by reducing hospital admissions and re-admissions. Coordinated efforts will extend the impact of the ACA and benefit the County.

CONCLUSION

The overall assessment of the Public Health Impact Study of Prince George's County is that the proposed new regional medical center, supported by a comprehensive ambulatory care network, comes at the right time: the right time in leadership, the right time for health care reform and the right time for County residents. With its vision of transforming the County's health care system, this initiative can catalyze partnerships and health care innovation, and most importantly, improve the health status of residents and the region.

The study provides a detailed and expanded assessment of the public health capacity and potential impact on health outcomes of a new health care delivery system in the County. We designed our study to address gaps in data identified by previous assessments of the County's health care workforce, hospital use patterns and health status and to learn from County residents, other key stakeholders and comparable health care delivery models. As part of the study process, we developed a number of new products that provide the basis for future and ongoing work: instruments used for the resident survey, stakeholder interviews and health system assessment; a novel approach to assessing population variables and presenting those data by geographic maps, and an econometric model that can be applied and modified for further planning purposes. The answers to the five framing questions provide insights from the range of study components and serve as the major findings of this study. The technical reports in Section II, available at *sph.umd.edu/princegeorgeshealth*, provide additional detail for each of the components.

The following recommendations are meant to support the success of the new health care system with its high-quality medical center and strong primary care network. To achieve this transformational change, it will be necessary to:

ESTABLISH A HIGH-QUALITY, ACADEMICALLY AFFILIATED REGIONAL MEDICAL CENTER WITH A STRONG AND COLLABORATIVE PREVENTION-FOCUSED AMBULATORY CARE NETWORK.

The medical center and network will serve as the anchor to the transformation of the health care system. It will need to establish strong relationships with the community and demonstrate its commitment to population health. The planning phase should include meetings with insurance providers and with physician groups to understand and address patient referral patterns.

DEVELOP A COUNTY-LED PROCESS TO IMPROVE PUBLIC HEALTH, EXPAND ACCESS TO HIGH-QUALITY PRIMARY CARE AND SUPPORT SYSTEMS INTEGRATION.

DELINEATE LEAD ROLES AND CREATE AN INCLUSIVE CENTRAL PLANNING PROCESS Achieving large-scale transformational change requires the clear contributions and coordination among many sectors. The County is in the unique position to lead the innovation and transformation of the public health and primary care network. Engaging residents in the planning and monitoring of the new system will ensure the services meet needs and support appropriate use. A "master health planning process" should be implemented to facilitate and guide partnerships and new health care entities that have an interest in serving the County, along with coordinating their efforts with the overall County Health Improvement Plan (CHIP). This process can address social determinants of health, reflect the concept of "health in all policies" and target priority areas identified by the County. Also as part of the "master health planning process," County hospitals, the Health Department and academic institutions should collaborate to fulfill mandates such as the hospital community benefit efforts.

COORDINATE EFFORTS TO MAXIMIZE THE IMPACT OF THE ACA IN PRINCE GEORGE'S COUNTY BY EMPHASIZING IMPROVED ACCESS, HEALTH EQUITY, HEALTH LITERACY, PREVENTION, POPULATION HEALTH AND DELIVERY INNOVATION. This emphasis is necessary to take advantage of health care reform. Residents will need tailored and frequent support to benefit from reform initiatives and new health care system components. A prevention program that produces clear, understandable, culturally sensitive, actionable education materials will improve health literacy and strengthen the capacity of all residents to enhance their health. This program will need to use appropriate channels to reach the diverse segments of the County, and offer ways to help residents understand and act upon prevention messages.

ADDRESS AREAS OF HIGH PRIMARY CARE NEED WITHIN THE COUNTY WITH A PARTICULAR FOCUS ON WORKFORCE DEVELOPMENT, COMMUNITY-BASED HEALTH FACILITIES AND OUTREACH PROGRAMS. Multiple approaches are needed to meet the primary care needs in select areas of the County. Strategies to recruit and retain primary care providers will

require securing necessary government funding and use of loan repayment and other mechanisms. Innovative workforce development programs are needed to extend prevention and care throughout the population and integrate all needed disciplines into the primary care network. These programs could include strategies to train and grow the workforce capacity of County residents, as well as address the County's health needs. These programs will include the traditional health professions programs with innovative education strategies that support team learning and care. They also should include the development of innovative health care extenders, such as community health workers and navigators. Strategies for establishing new primary care centers would benefit from exploring additional federal designation of medically underserved areas/populations and health workforce shortage areas.

SUPPORT INNOVATION IN HEALTH CARE, PREVENTION AND PUBLIC HEALTH DELIVERY. The time is right to seize opportunities to enhance programs such as the School-based Wellness Centers, incorporate promising practices such as the patient-centered medical home and accountable care organizations, and integrate behavioral/mental and dental health into the new system. A new health care system could create a novel and model network, one that integrates primary care, public health and the active partnerships necessary for primary, secondary and tertiary prevention to improve health outcomes and curb disease progression. A critical review of existing public health functions and programs is needed in order to prepare to achieve the goal of an accredited health department. Given the emphasis on primary care and on reducing preventable hospitalizations and emergency department use, a detailed review also is needed of each of the identified priority health outcomes to implement appropriate health promotion, disease prevention and health care workforce initiatives. Support is needed for health information technology to facilitate and reinforce these linkages among public health, other public sector programs and clinical health care (outpatient and hospital) and provide real-time surveillance and evaluation. Lessons learned from comparable models provide a wide range of options from which to choose and adapt as needed.

DEVELOP A CLEAR BRAND THAT PROMOTES A HIGH-QUALITY HEALTH CARE SYSTEM, ENCOURAGES RESIDENTS TO RETURN TO THE COUNTY FOR CARE AND CONTRIBUTES TO A SUCCESSFUL AND THRIVING SYSTEM.

Thinking about the branding and marketing at this early stage will contribute to the system design. The County is rich in history and has a long legacy of commitment to community. A strategic marketing campaign's goals for the new health care system would include: creating a positive brand for the County's system, increasing the perceived stature of the quality of care that will be available, focusing on centers of excellence and unique facets of the system and increasing utilization of the new health care services.

VISION FOR THE FUTURE

Today, Prince George's County is primed for change with its new leadership and a renewed commitment to improving the health and quality of life of its citizens. Partnering with the state of Maryland, the University of Maryland Medical System, Dimensions Healthcare System and the public health system, the County has an exciting opportunity to re-imagine a health care system that enhances individual patient care, improves population health and reduces per capita costs of care. By integrating public health, primary care and a world-class regional medical center to serve the County and Southern Maryland, this new system would be known for its key characteristics:

- Guided by a master health plan that integrates the public and private sectors, along with philanthropy, in a broader vision to improve the social determinants of health and actual health care in the County,
- Committed to improving both health care and the health status of the County,
- Affiliated with the University of Maryland and positioned to offer innovative inter-professional care,
- Comprised of a robust network of strategically placed primary care providers,
- Distinguished by a state-of-the-art medical center with centers of excellence that draw insured patients from the region,
- Focused on the integration of health promotion and disease prevention services and programs that address common risk factors, such as obesity, physical inactivity and tobacco use, the leading causes of morbidity and mortality
- Characterized by health literacy principles infused into health care, health facilities and health education for the public and providers and by culturally, competent health professionals
- Built on a sophisticated electronic and personal health care records system and other health information technology that facilitates coordinated care and enhances population health.

To be successful, this new health care system, including its regional medical center, must grapple with the complex racial, ethnic, income and educational diversity of Prince George's County. There are significant pockets of lower-income populations inside the Beltway, many without health insurance, while there are also higher income and education communities that are well-insured. As we move outside the Beltway, income and educational levels generally rise along with the proportion of individuals with insurance coverage. Yet, in 2014, as the health benefit exchange component of the ACA is realized, the County will have significantly more of its population insured, providing additional opportunities for residents to benefit from comprehensive preventive and primary care services.

While increased insurance coverage will benefit the new system and contribute to better health outcomes, the new system must grapple with the demands of partnering with others to assure that safety net facilities, such as FQHCs, are in place. This must be done early on while the new system also positions itself to meet market demands for high-quality care that will prove compelling to insured County residents and insurers themselves. The larger integrated system, working in partnership with other County agencies, can facilitate progress toward the realization of health equity in the County.

Building this innovative health system can stimulate complex changes in the County and state. Improving the health of the County is essential to improving the health rankings for the state. As the health of the County's population improves, so does its attractiveness as location with a vital workforce, which will potentially stimulate new economic investments. Therefore, the health system itself can reap the benefits of new economic investment in the County by the private and public sectors and drive its new economic vitality.

SELECTED REFERENCES

Abt SRBI. (2012). *2011 Prince George's County Health Survey Methodology Report.*

Agency for Healthcare Research and Quality. (2012). Prevention Quality Indicators Overview. Retrieved from *www.qualityindicators.ahrq.gov/Modules/pqi_overview.aspx*

Berwick, D.M., Nolan, T.W., Whittington, J. (2008). The Triple Aim: Health, Care and Cost. Health Affairs, 27(3), 759–769.

Institute of Medicine. (1994). Defining Primary Care: An Interim Report. Retrieved from *www.nap.edu/openbook.php?record_id=9153&page=R1*

Institute of Medicine. (2012). Primary Care and Public Health: Exploring Integration to Improve Population Health. Washington DC: The National Academies Press.

Lurie, N., Harris, K. M., Shih, R. A., Ruder, T., Price, A., Martin, L. G., Acosta, J., & Blanchard, J. C. (2009). *Assessing health and health care in Prince George's County*. Prepared for the Prince George's County Council, by RAND Corporation.

Maryland Department of Health and Mental Hygiene. (2010). *2010 Primary Care Needs Assessment*. Retrieved from *ideha.dhmh.maryland.gov/IDEHASharedDocuments/ PCO_Needs_Assessment_11_16_11.pdf*

Maryland Department of Health and Mental Hygiene. (2011). *Health Care Reform Coordinating Council. Created by Executive Order 01.01.2010.07 Final Report and Recommendations*. Retrieved from *www.familiesusa.org/conference/health-action-2011/speaker-materials/Health-Reform-ExecutiveSum-12111.pdf*

Maryland Department of Health and Mental Hygiene. (n.d.). *State Health Improvement Process Home*. Retrieved from *dhmh.maryland.gov/ship/SitePages/Home.aspx*

Maryland Governor's Workforce Investment Board. (2011). *Preparing Maryland's Workforce for Health Reform: Health Care 2020.* Retrieved from *www.gwib.maryland.gov/pub/healthreformcare2020.pdf*

Maryland Health Care Commission. (2008). *Task Force on Health Care Access and Reimbursement Established under Senate Bill 107*. Retrieved from *www.healthequity.umd.edu/documents/Task%20Force%20on%20Health%20Care%20Access%20and%20Reimbursement%20%282008%29.pdf*

Maryland Health Care Commission. (2011). *Maryland Physician Workforce Study: Applying the Health Resources and Services Administration Method to Maryland Data.* Retrieved from *mhcc.dhmh.maryland.gov/workforce/Documents/sp.mhcc.maryland.gov/workforce/physician_workforce_study_20110513.pdf*

Maryland Health Services Cost Review Commission. (2010). *Maryland Hospital Community Benefits Report FY 2010.* Retrieved from *www.mdhospitals.org/File%20Library/Community/Community%20Benefits/FY2010-HSCRC-Maryland-Hospital-Community-Benefits-Report_July-2011.pdf*

Maryland Physician Workforce Study. (2008, April). Boucher and Associates. Sponsored by Maryland State Medical Society and the Maryland Hospital Association.

Partnering Toward a Healthier Future. (2007). Center on Health Disparities, Adventist Health Care. Retrieved from *www.adventisthealthcare.com/pdf/ahc-chd-progressreport-2007.pdf*

Prince George's County Health Department. (2011). *Prince George's County Health Improvement Plan 2011 to 2014, Blueprint for a Healthier County*. Retrieved from *www.princegeorgescountymd.gov/Government/AgencyIndex/Health/pdf/LocalhealthPlanPrefinal.pdf*

Robert Wood Johnson Foundation. (2012). 2012 County Health Rankings Highlight Healthiest, Least Healthy Counties in Every State. Retrieved from *www.rwjf.org/publichealth/product.jsp?id=74147&cid=XEM_A5857*

Stine, N. W., & Chokshi, D. A. (2012). Opportunity in Austerity—A Common Agenda for Medicine and Public Health. *New England Journal of Medicine*, 366(5), 395–397.

United States Department of Health and Human Services. (2010). Healthy People 2020. Retrieved from *www.healthypeople.gov/2020/default.aspx*

United States Department of Health and Human Services. Health Resources and Services Administration. (2011). HRSA Shortage Designation: Health Professional Shortage Areas & Medically Underserved Areas/Populations. Retrieved from *bhpr.hrsa.gov/shortage*

United States Department of Health and Human Services, Health Resources and Services Administration. (2012). Shortage Areas: HPSA by State & County. Retrieved from *hpsafind.hrsa.gov/*

GLOSSARY OF KEY TERMS

ACCOUNTABLE CARE ORGANIZATIONS (ACOS) Groups of doctors, hospitals and other health-care providers, who come together to give coordinated high-quality care to their Medicare patients and ensure that patients get the right care at the right time.

AMBULATORY CARE Health-care services offered on an outpatient basis

AMBULATORY CARE SENSITIVE CONDITIONS Conditions that are preventable and treatable in a primary care setting and, when addressed, should prevent/avoid hospitalization

BASELINE DATA Data collected to establish and understand the existing conditions before any kind of intervention or experimental manipulation begins

BODY MASS INDEX (BMI) A measure calculated from a person's height and weight used to screen for body fatness. This measure is used to identify weight conditions that may lead to health problems.

DEAMONTE DRIVER A boy from Prince George's County Maryland who died at age 12 from a brain infection caused by bacteria from tooth decay in February 2007. His infection, which could have been prevented, and his tragic death have galvanized a national critical review of the capacity to provide oral health care and have stimulated legislative and programmatic actions.

EVIDENCE-BASED PROTOCOLS (OR EVIDENCE-BASED HEALTH CARE) The conscientious use of current best evidence in making decisions about the care of individual patients or the delivery of health services to a population. Current best evidence is up-to-date information from relevant, valid research about the effects of different forms of health care and health promotion efforts.

FEDERALLY QUALIFIED HEALTH CENTER (FQHC) A health organization that offers primary care and preventive health services to all patients regardless of their ability to pay for care. A FQHC is a public or private nonprofit organization that has been reviewed by the federal government and meets specific criteria to receive government funding. It must serve a medically underserved area or population.

HEALTH DISPARITIES Differences in the presence of disease, health outcomes, or access to health care that are closely linked with social, economic and/or environmental disadvantage based on race and ethnicity; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation, or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.

HEALTH EQUITY The state of achieving the highest level of health for all people. This requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and eliminate health and health-care disparities.

HEALTH LITERACY The degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions. Health literacy is enhanced when providers give patients accurate, actionable health information in plain language and health facilities include design and system changes that improve health information, communication, informed decision-making and access to health services.

HEALTH OUTCOME A measure of a health condition such as disease status or death.

HEALTH PROMOTION The process of enabling people to increase control over and to improve their health. Health promotion not only strengthens the skills and capabilities of individuals, but also involves changing social, environmental and economic conditions that impede public and individual health.

HOSPITAL EVENTS Several terms are used in this report to define hospital events:

A **hospital discharge** is the process by which a patient is released from the hospital at the time inpatient care is no longer needed. Discharges or hospital admissions can be defined by the specific conditions that stimulate them. If these conditions are related to ambulatory care-sensitive conditions (see above), then these can reflect adequacy of the primary care network.

Hospital readmissions are used to describe hospitalizations that result seven to 30 days after a patient

has been released from a hospital. Hospital readmissions reflect on the quality of the hospital discharge process and on the capacity of the primary care network.

PATIENT-CENTERED MEDICAL HOME A team-based health-care delivery model led by a physician that integrates patients as active participants and provides comprehensive and continuous preventive, acute and chronic care to patients with the goal of obtaining the best health outcomes.

PATIENT PROTECTION AND AFFORDABLE CARE ACT The health-care reform law passed by the U.S. Congress in 2010

POPULATION HEALTH The health outcomes of a group of individuals, including the distribution of such outcomes within the group. The goal of population health is to reduce inequities and improve the health of the entire population.

PRIMARY CARE General health-care services provided by clinicians who are accountable for addressing a large majority of personal health-care needs. These clinicians often are the first point of contact for patients, will develop sustained partnership with patients, and practice in the context of family and community.

PRIMARY CARE PHYSICIANS A category of physicians that includes specialists in the general practice of family medicine, internal medicine, pediatrics and obstetrics and gynecology.

PRIMARY PREVENTION Efforts to keep diseases from occurring among susceptible people by reducing exposures or eliminating risk factors. These generally include health promotion and health education activities provided through public health, primary care and community programs.

PROVIDER-TO-POPULATION RATIO A measure used to determine the capacity of the number of providers available in a geographic region to serve the population size.

PUBLIC HEALTH The art and science of protecting and improving the health of communities.

PUBLIC USE MICRODATA AREA (PUMA) Areas defined by Census records in which each contains approximately 100,000 people. PUMAs are redefined every ten years in conjunction with the decennial census.

RANDOM (OR RANDOMIZED) SURVEY A survey of a sample population in which every person in the population has an equal chance of being selected.

SECONDARY PREVENTION Efforts focused on detecting disease early and stopping its progression. These include screening, periodic health examinations and reduction of risk factors through primary care and public health sectors.

TERTIARY PREVENTION Efforts focused on reducing further complications, disability and death once disease has been identified. These include rehabilitation, chronic disease treatment, specialty care and acute care through hospital services.

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