STATE OF MARYLAND
DHMH
Maryland Department of Health and Mental Hygiene
Larry Hogan, Governor - Boyd Rutherford, Lt. Governor - Dennis R. Schrader, Secretary

March 28, 2017

The Honorable Larry Hogan
Governor
State of Maryland
Annapolis, MD 21401-1991

The Honorable Thomas V. Mike Miller, Jr.
President of the Senate
H-107 State House
Annapolis, MD 21401-1991

The Honorable Michael E. Busch
Speaker of the House
H-101 State House
Annapolis, MD 21401-1991

RE: Health-General § 20-1407, 2016 Legislative Report of the Health Enterprise Zones Initiative

Dear Governor Hogan, President Miller, and Speaker Busch:

Pursuant to Health-General § 20-1407, the Maryland Department of Health and Mental Hygiene (DHMH) and the Maryland Community Health Resources Commission (CHRC) submit this 2016 report on the progress and accomplishments of the Maryland Health Enterprise Zones Initiative in calendar year 2016.

The Act requires DHMH and CHRC to submit an annual report to the Governor and Maryland General Assembly that includes: (1) Number and types of incentives utilized in each HEZ; (2) Evidence of the impact of tax and loan repayment incentives in attracting practitioners to the HEZs; (3) Evidence of the impact of incentives offered in HEZs in reducing health disparities and improving health outcomes; and (4) Evidence of the progress in reducing healthcare costs and hospital admissions and readmissions in HEZs. This information is addressed in the report and has been prepared by DHMH, which has overall programmatic responsibility for the HEZ Initiative. CHRC provides oversight and accounting of HEZ fiscal resources.

If you have questions or need more information about this report, please contact Webster Ye, Director of Governmental Affairs at (410) 767-6480, Mark Luckner, Executive Director, Community Health Resources Commission, at (410) 260-7046, or Donna Gugel, Director, Prevention and Health Promotion Administration, at (410) 767-6728.

Sincerely,

Dennis R. Schrader
Secretary

John Hurson
Chair, Community Health Resources Commission

Enclosure

cc: Webster Ye
Howard Haft
Donna Gugel
Mark Luckner
Maura Dwyer
Sarah Albert, MSAR# 9344

MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE

and

COMMUNITY HEALTH RESOURCES COMMISSION

Health General Article § 20-1407
Annotated Code of Maryland

HEALTH ENTERPRISE ZONES

2016 REPORT

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Dennis R. Schrader
Secretary
Department of Health and Mental Hygiene

Honorable John Hurson
Chairman
Community Health Resources Commission

Maryland Health Enterprise Zones (HEZ) Program
2016 Annual Report

Table of Contents

I. Executive Summary

Maryland has a number of advantages that allow its residents access to quality health care. Despite these advantages, Maryland lags behind other states in several health indicators. Health disparities by race/ethnicity and by place of residence are seen throughout the State. In response, the Maryland Health Quality and Cost Council's Health Disparities Workgroup was charged in 2011 with investigating strategies to reduce and eliminate health disparities. In 2012, the Workgroup's recommendations led to the introduction of SB 234 (Ch. 3 of the Acts of 2012), the Maryland Health Improvement and Disparities Reduction Act of 2012 (the Act). The Act created the policy framework to establish and implement the Health Enterprise Zones (HEZs) Initiative. Five HEZs were designated by the Secretary of the Department of Health and Mental Hygiene (DHMH) in January 2013.

The Act provides financial incentives to recruit and retain health care providers to HEZs including loan repayment assistance and income tax credits for newly hired practitioners, and hiring tax credits for employers of new HEZ practitioners and other qualified employees. As of December 2016, a total of $203,938 has been awarded for the Health Care Practitioner Income Tax Credit and 16 HEZ practitioners have been awarded loan repayment assistance.

As a new initiative, Year 1 (April 1, 2013 through March 31, 2014) was primarily dedicated to recruitment of staff, building procurement and renovation, establishment of protocols, training of practitioners, and development of community resources. The primary focus of Year 2 was linking unmet need in the HEZ communities with added provider and community service capacity developed in Year 1. The primary focus of Year 3 was on quality of added provider and community service capacity, and in Year 4, on health outcomes, namely reductions in avoidable hospital utilization and related costs. Three and a half years into implementation, the HEZs report opening or expanding 22 health care delivery sites and recruiting or retaining 28.3 full time equivalent (FTE) practitioners to provide services in the HEZs, including 11.7 FTE licensed independent practitioners that have provided 304,330 visits to 169,842 patients; expanding access to self-management supports and community enabling interventions; and improving health information technology, health literacy, cultural competency, and community capacity. Most of the HEZs, especially those in rural areas, report challenges in recruiting and retaining primary care physicians. The HEZs have also confronted challenges in managing their most at-risk patients and participants; collecting and reporting individual patient clinical outcomes data; aggregating this data across multiple electronic health record and paper-based systems; attempting to measure the marginal impact of their efforts beyond what would have occurred had they not become an HEZ; and securing funding to sustain their programs over the long term.

The HEZs are collecting data on their activities and working to collect health outcomes data to determine the effectiveness of the program. An evaluation of the HEZ Initiative is being conducted by the Johns Hopkins Bloomberg School of Public Health's Center for Health Disparities Solutions. In Year 4, the State HEZ Team continues to provide technical assistance to the HEZs and is working with the HEZs, with support from the Robert Wood Johnson Foundation, to develop an HEZ sustainability plan.

II. Authorizing Legislation, Funding, and Joint Management

A. Maryland Health Improvement and Disparities Reduction Act

Maryland has a number of advantages that allow its citizens access to quality health care. The State has outstanding medical schools, hospitals, and among the 50 states, it has one of the highest median household incomes and the second highest number of primary care physicians per 100,000 population. Despite these advantages, Maryland lags behind other states in several health indicators. In America's Health Rankings (2015), a ranking system where 1st is best, Maryland ranked 30th in infant mortality, 30th in cardiovascular deaths, 21st in cancer deaths, and 25th in obesity prevalence. For these and for other key health indicators, important and persistent health disparities by race/ethnicity and by place of residence exist in the State.

In response to the State's persistent health disparities, the Maryland Health Quality and Cost Council's Health Disparities Workgroup (the Workgroup) was convened, composed of public health experts, research scholars, and community health leaders, and was charged with investigating strategies to reduce and eliminate health disparities. The Workgroup, led by Dean E. Albert Reece, MD, PhD, MBA, of the University of Maryland School of Medicine, articulated the concept of applying principles of economic development and revitalization to public health and health care delivery. The final report of the Workgroup recommended a range of incentives including tax credits, loan repayment assistance, and grant funding to expand access in underserved areas, reduce health disparities, and improve health outcomes. These incentives would serve to attract primary care clinicians to expand or open practices and would support community-level interventions such as community health workers (CHWs) and other strategies to address social determinants of health. The key recommendation of the Workgroup was the creation of "Health Enterprise Zones," defined as contiguous geographic areas where the population experiences poor health outcomes that contribute to racial/ethnic and geographic health disparities, and are small enough for incentives to have a measurable impact.

In 2012, the recommendations of the Workgroup led to the introduction of SB 234 (Ch. 3 of the Acts of 2012), the Maryland Health Improvement and Disparities Reduction Act of 2012 (the Act). The purpose of the Health Enterprise Zones (HEZs), enabled by the Act, is to target State resources to: (1) reduce health disparities; (2) improve health outcomes; and (3) reduce health costs and hospital admissions and readmissions in specific areas of the State. The Act created the policy framework to establish and implement the HEZ Initiative. Funding for the HEZ Initiative was placed in the budget of the Maryland Community Health Resources Commission (CHRC) consistent with their charge to direct resources to communities where poor health persists despite ongoing services provided by the public and private sectors. The Department of Health and Mental Hygiene (DHMH) was charged to apply their public health expertise in core public health services and their State authority to ensure, through assessment, policy development, and assurance, that quality, safe, and effective health services are delivered. The Maryland General Assembly authorized DHMH and CHRC to collaborate in implementing the HEZ Initiative.

B. Funding and Resources

The Act provides $4 million per year over the four-year duration of the HEZ Initiative and creates the HEZ Reserve Fund, which is administered by CHRC. The Act provides access to a range of incentives and resources for the HEZs, including: (1) income tax credits; (2) hiring tax credits; (3) loan repayment assistance; and (4) grant funding provided by CHRC. In addition to these incentives and resources, the State also supports the HEZs with specific technical assistance (TA) and program guidance, which are described in more detail in Section V of this report.

C. DHMH and CHRC Shared Management

Members of the State HEZ Team include leaders in DHMH from the Prevention and Health Promotion Administration (PHPA), Office of Minority Health and Health Disparities (OMHHD), and the Virtual Data Unit (VDU). The HEZ Team meets frequently, working together to establish guidelines for implementation, reporting, budget expenditure guidance, and TA. PHPA guides the loan repayment and HEZ tax credit projects, and PHPA's Center for Chronic Disease Prevention and Control provides chronic disease guidance. OMHHD provides resources and expertise for cultural competency assessment and training, and VDU, along with the entire HEZ Team, assists with identifying performance and program evaluation metrics. CHRC provides oversight and accounting of HEZ fiscal resources.

III. HEZ Implementation

A. Solicitation and Designation

After the Act was signed into law, DHMH and CHRC held a public comment period to solicit feedback on selection criteria for the HEZs, potential uses of HEZ funding, and outcome metrics that should be developed to monitor the progress and implementation of the HEZs. Public comments were incorporated into the Call for Proposals issued by CHRC. Under the Act, non-profit community-based organizations or local government agencies were eligible to apply for HEZ designation status on behalf of a local community. Applicants were encouraged to reflect inclusion, community participation, collaboration, and to support the priorities identified by Local Health Improvement Coalitions. Applications must have demonstrated need and intervention strategies to improve health outcomes in the potential HEZ. The Call for Proposals generated a total of 19 applications from 17 jurisdictions, representing rural, urban, and suburban areas of the State. These applications were evaluated competitively on 13 review principles by an independent HEZ Review Committee comprised of experts in the fields of public health, health care finance, health disparities, and health care delivery. On January 24, 2013, based on recommendations from CHRC, former DHMH Secretary Dr. Joshua Sharfstein designated Maryland's first five HEZs.

B. HEZ Legislative Expectations, Logic Model, and Deliverables

The Act established the following expectations for the HEZs:

Health improvement strategies:

- Increase health care provider capacity (attract practitioners to the HEZs)
- Improve health services delivery
- Effectuate community improvements
- Conduct outreach and education

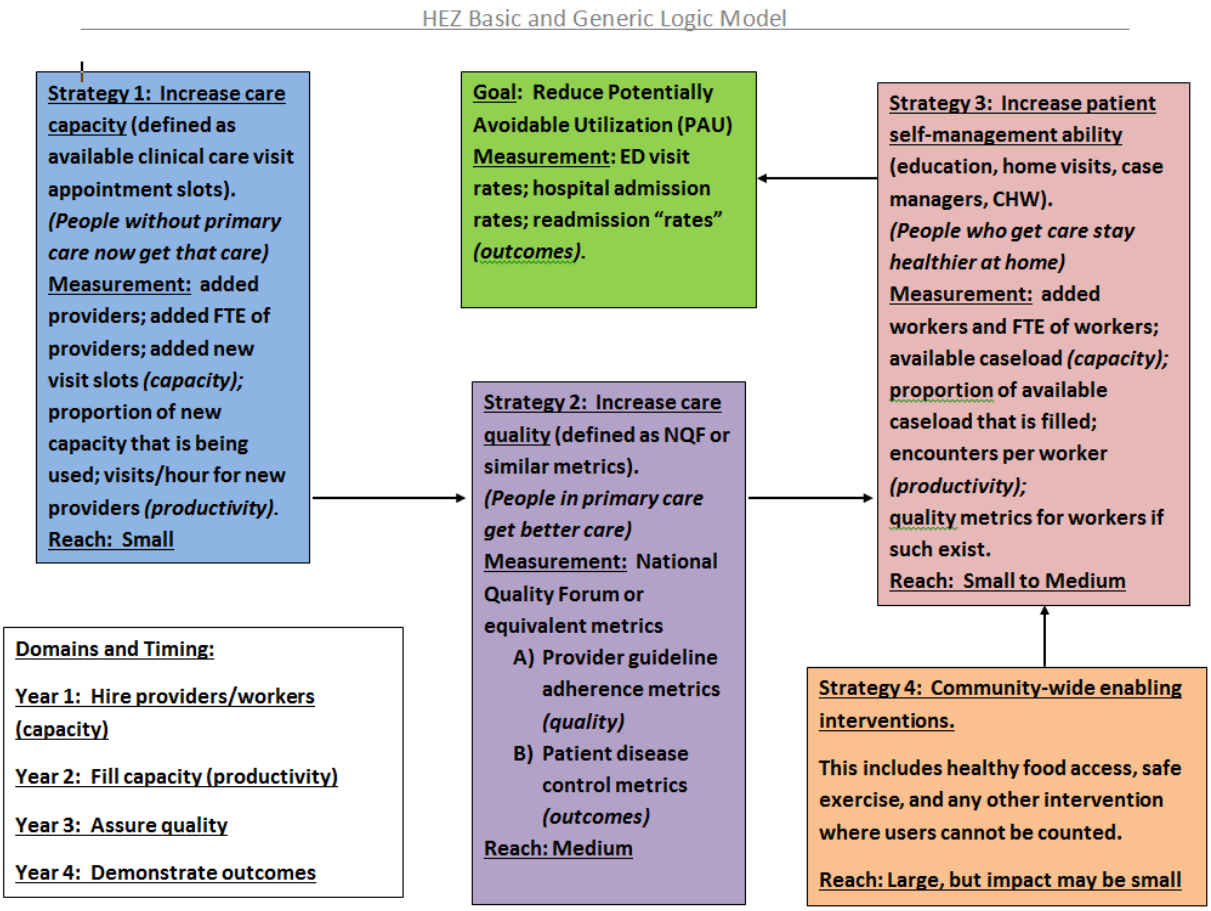
Health outcome expectations:

- Improve health outcomes
- Reduce health disparities (and implicitly, improve minority health)
- Reduce health care costs and hospital admissions and readmissions

Emergency department (ED) visit rates and hospital admission and readmission rates can be strongly affected by the degree of success with which patients can manage their chronic diseases at home. Therefore, a key strategy of the HEZs is to optimize patient self-management of chronic disease (see Strategy 3 in Figure 1). The factors that are required for successful chronic disease management include:

1. **Access to a provider.** Access involves both affordability (insurance) and availability (provider in the vicinity, who takes one's insurance, and has convenient hours).
2. **Quality care.** Quality care requires that a provider accurately assesses the patient's health issues and develops the appropriate evidence-based treatment plan. Providers should follow established chronic disease management guidelines.
3. **Patient-provider communication and patient education.** Proper communication and education make it possible for a patient to follow the instructions of a provider after leaving the office. Without the necessary information, patients may not be able to follow the treatment plans.
4. **Community supports for self-management.** Community support, which includes the involvement of case managers and CHWs, provides at-home support, allowing for patients to comply with their treatment plans.

Figure 1. HEZ Logic Model



Every activity of an HEZ concentrates on promoting at least one of the above strategies, with the goal of achieving one or more of the health outcome expectations. The strategies have a logical temporal sequence, which maps onto the four years of the HEZ Initiative as follows:

- **Year 1:** Focus on **capacity expansion**, including HEZ practitioners and CHWs/case managers. Priority activities included recruitment and training.
- **Year 2:** Focus on **productivity** of HEZ practitioners, programs, and CHWs/case managers to utilize the new capacity, ideally with the neediest patients. Priority activities included program development, outreach, and additional training.
- **Year 3:** Focus on the **quality** of care provided by HEZ practitioners and CHWs/case managers. Priority activities included defining relevant metrics for CHWs/case managers and National Quality Forum (NQF) or similar metrics for providers.
- **Year 4:** Focus on **health outcomes**, namely hospital utilization and cost reductions. While tracking systems for these health outcomes will have evolved over all four years of the HEZ Initiative, it is likely that only in Year 4 will the intervention be mature enough (if Years 1-3 have been successful) to make a difference.

C. Overview of the Progress of the Five HEZs

Figure 2. Map of the Five HEZs

Annapolis/Morris Blum (Suburban)
Jurisdiction: Anne Arundel County
Community: Annapolis, Morris Blum Public Housing Building (and zip code 21401; population 36,805)
Coordinating Organization: Anne Arundel Medical Center (AAMC)
Project Title: Annapolis Community Health Partnership (ACHP)

Goals and Intended Outcomes. ACHP goals include establishing a trusted source of primary care within the Morris Blum senior housing facility for its residents and the surrounding community; and screening and treating patients for cardiovascular risk factors, including diabetes, hypertension, hyperlipidemia, obesity, and smoking. By addressing risk factors and managing chronic disease, ACHP expects to reduce preventable 911 calls, ED visits, and hospital admissions and readmissions for the population served.

Target Community. The geographic area served by ACHP encompasses a neighborhood just blocks from State Circle in Annapolis. The Morris H. Blum building itself was a microcosm of a persistent pocket of unmet need. Its 184 elderly and disabled residents had been experiencing crisis-driven, episodic, and fragmented care. Data from local resources revealed that in one year, there were 220 medically-related 911 calls from the Morris Blum building. In six months alone, 73 Morris Blum residents experienced 175 ED visits, with 38 visits resulting in admissions. Fewer than ten Morris Blum residents accounted for 41% of those 175 ED visits.

Key Interventions and Milestones to Date (see ACHP program data in Appendix A, Table 1). ACHP reports adding four FTEs, including one FTE licensed independent practitioner and one FTE other licensed or certified health care practitioner, to support the new Morris Blum clinic, which received Level 3 recognition by the National Committee for Quality Assurance as a

Patient Centered Medical Home for systematic use of patient-centered coordinated care management processes. The clinic opened in October 2013 in the Morris Blum building and as of September 30, 2016, has provided 7,089 patient visits to 4,191 patients who live in the Morris Blum residence and the surrounding community. The clinic has been able to reduce medical 911 calls, ED visits, and admissions and readmissions among individuals living at the Morris Blum residence (see Table 1 below).

Table 1. Hospital Utilization Among Morris Blum Residents, FY 2009-2016

	AAMC FY 2009	**AAMC FY 2010**	**AAMC FY 2011**	**AAMC FY 2012**	**AAMC FY 2013**	**AAMC FY 2014**	**AAMC FY 2015**	**AAMC FY 2016**
AAMC Admission events	44	70	89	30	82	84	48	63
AAMC Readmission events	45 total readmission events FY09-FY12				16	20	<10	10
AAMC ED Visits	153	151	150	232	179	190	148	165
911 calls	N/A	N/A	N/A	N/A	199	195	146	148

Cells are suppressed for counts <10.

To improve coordination of care, the new clinic has been supported by AAMC's integrated electronic health record (EHR), which is shared by the hospital and multiple specialty practices. AAMC's integrated EHR allows for identification of patients who have been an inpatient or visited the ED, and for the development of diabetes and coronary artery disease patient registries. An initiative identifies patients in the ED who are uninsured and need follow-up, and links these "medically homeless" patients to the Morris Blum clinic, which has designated appointment slots daily to accommodate ED follow-up. Smoking cessation workshops have been provided for 480 individuals. The clinic also includes onsite lab services to enhance the likelihood that patients receive needed medical testing as well as care coordination services, which have been provided to 426 patients as of September 30, 2016.

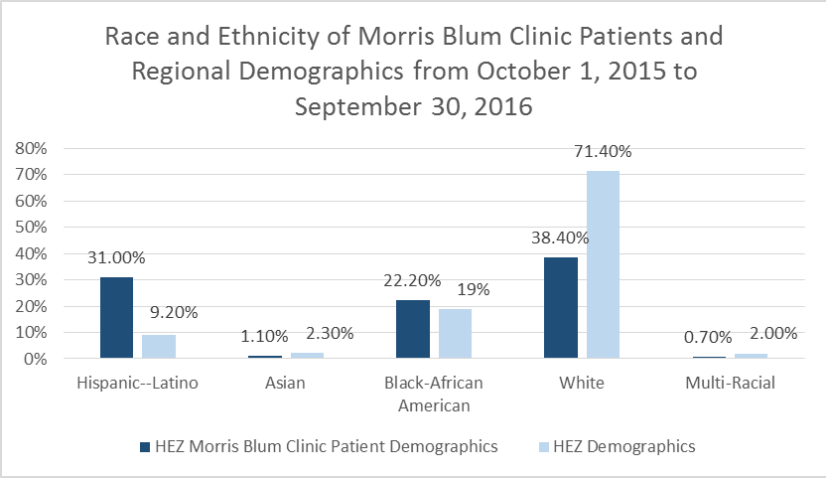
A collaborating mental health provider helps integrate behavioral health with ACHP's primary care medical home (PCMH). Annual depression and behavioral health screenings are incorporated into the primary care work flow with access to specialty behavioral health care within 48 hours if necessary. The "One-Call Care Management" program offers immediate access to a licensed clinical social worker who will work directly with patients to address their non-medical needs. Additionally, ACHP collaborates with an alternative school for children with behavioral issues to help meet the primary care needs of children and their families. Annual domestic violence screenings, using a three-question universal screening tool, have been embedded into the EHR and were initiated at the Morris Blum clinic in July 2015.

Vulnerable ACHP patients also benefit from home visits by the doctor, which are supplemented by CHW interventions provided by a partner organization, and navigational services for newly insured patients. Family meetings are held to discuss goals of care for those with advanced

complex illnesses and ACHP has developed a number of public health programs to support residents and clinic patients in their self-management efforts. Blood pressure screenings, medication reconciliation (provided through onsite weekly Pharm.D. services), nutrition classes, and walking groups have served over 3,400 participants and are integral components of the program.

ACHP serves a diverse patient population as indicated by the program data presented in Figure 3 below. The Morris Blum Clinic serves higher proportions of Hispanic-Latino and Black-African American clients than the proportion of Black-African Americans and Hispanic-Latinos in the total population of the HEZ. To ensure the highest quality of care for this diverse community, ACHP conducted bias awareness and trauma informed care trainings for Morris Blum and AAMC staff and collaborated with OMHHD to provide cultural competency training. AAMC has also implemented a Community Health Improvement Committee to assess neighborhood needs and develop and implement targeted education and screening programs for underserved communities in Annapolis. Finally, HEZ staff and Morris Blum residents actively participate in AAMC's Health Equity Subcommittee to develop and implement patient activation programs geared toward underserved populations.

Figure 3.



Data Sources: HEZ program data and Nielsen Pop-Facts Demographics 2014.

Caroline/Dorchester Counties (Rural)
Jurisdiction: Dorchester and Caroline Counties
Community: Mid-Shore Region (zip codes 21613, 21631, 21632, 21643, 21659, 21664, 21835; population 36,123)
Coordinating Organization: Dorchester County Health Department
Project Title: Competent Care Connections (CCC)

Goals and Intended Outcomes. The Caroline/Dorchester CCC HEZ's goals are to: (1) improve outcomes and reduce risk factors related to diabetes, hypertension, asthma, and behavioral health; (2) increase the primary care workforce; (3) increase the community health workforce; (4) increase community health resources, access to healthy food, safe physical activity, and support for optimal mental health and addiction recovery; (5) reduce ED visits and

hospitalizations for diabetes, hypertension, asthma, and behavioral health; and (6) reduce unnecessary health care costs related to ED visits and preventable diseases.

Target Community. The CCC HEZ encompasses seven contiguous zip codes in the rural counties of Caroline and Dorchester. Data from Maryland's State Health Improvement Process website and OMHHD indicate that heart disease, cancer mortality, and ED visits in the HEZ due to diabetes, hypertension, and behavioral health are higher than the overall State rates. Significant disparities exist between racial/ethnic groups and geographic locations. ED visits among Black-African Americans for these conditions were markedly greater than among Whites in both counties and were much higher than Maryland averages.

Key Interventions and Milestones to Date (see CCC program data in Appendix A, Table 2). The HEZ has expanded the primary care workforce by adding 30.1 FTEs in the HEZ as of September 30, 2016, including 4.3 FTE licensed independent practitioners and 8.55 FTE other licensed or certified health care practitioners. As of September 2016, these HEZ programs and practices have provided 23,373 visits and encounters to 5,129 patients and clients across the HEZ. Care coordination services have been provided to 409 patients to date through a full time HEZ Care Coordinator at Choptank Community Health System, Inc., a Federally Qualified Health Center (FQHC), which operates two clinics in the HEZ. Care Coordination efforts are targeted to those who have been hospitalized or visited the ED, and high utilizers (defined by the CCC HEZ as those who have visited the ED three times within 30 days for the same condition) are linked to a Community Health Outreach Worker (CHOW) to help find needed services, such as insurance and transportation. An HEZ EHR, which went live in October 2015, enables HEZ partners to identify high utilizers, share information about patients, and track the use of clinical services, community resources, and referrals.

An HEZ-supported asthma program, "Breathe Easy: a Comprehensive, Evidence-Based School-Based Health Center Model for Asthma Improvement" is being implemented in the CCC HEZ. Community-wide enabling supports, such as programs that promote food access, weight management, and physical activity for patients with high hospital utilization due to chronic disease have been expanded and are expected to improve patient compliance and decrease ED visits and hospital admissions for chronic disease. The CCC HEZ reports that 998 patients have participated in peer recovery support and weight management programs as of September 30, 2016 (see Maryland Healthy Weighs (MHW) data below).

The expanded Mobile Crisis Team (MCT) served 636 individuals and has reduced response time to mental health crises in Caroline and Dorchester Counties from over one hour prior to the expansion of the MCT, to 19 minutes in September 2016. The MCT has facilitated 545 ED diversions and 1,525 initial and follow-up dispatches for a potential savings of nearly $1.2 million. Expanded primary care and outpatient behavioral health services through School Based Wellness Centers in the CCC HEZ have provided somatic health services to 940 students and mental health services to 521 students. An adult mental health clinic was opened with HEZ support in Federalsburg in November 2015, and has served 430 patients to date. CHOWs have provided education or health screenings to over 3,200 individuals.

From April to September 2016, MHW had 75 patients enrolled in their HEZ program. Of the 75 total patients, 30 had completed at least eight weeks of the weight loss phase (Phase 1) in the past six months, resulting in the following improved health outcomes:

All Patients (N= 30)	**Start**	**Current**	**Change**
Weight (average)	284	236.8	↓ 16.6%
BMI* (average)	46.3	38.6	↓ 16.7%
Average Weeks in Phase 1	25 weeks		

*Body Mass Index

Of the 30 patients who completed at least eight weeks of the weight loss phase, five were diabetics. The results below are for these patients. In addition, 100% of these diabetic patients had a reduction or elimination of diabetic medications.

Diabetic Patients (N= 5)	**Start**	**Current**	**Change**
Weight (average)	334.8	282.3	↓ 15.5%
BMI (average)	50	42.2	↓ 15.7%
HgA1c (average)*	7.7	6.2*	↓ 19.3%
Percent with low-density lipoprotein <100		60%	
Percent with blood pressure <140/90		100%	

*The hemoglobin A1C test is a blood test that provides information about a person's average levels of blood glucose, also called blood sugar, over the past 3 months.

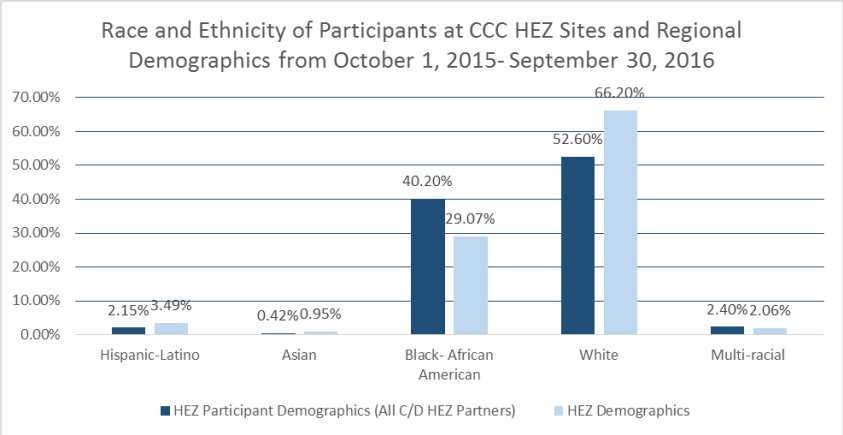
Of the 30 patients who completed at least eight weeks of the weight loss phase, 12 had a diagnosis of hypertension. The following results are for these patients:

Hypertensive Patients (N= 12)	**Start**	**Current**	**Change**
Weight (average)	296.8	249.2	↓ 16.0%
BMI (average)	45.3	38.3	↓ 15.5%
Percent with blood pressure <140/90*		100%	

*In addition, 67% of these patients had a reduction or elimination of high blood pressure medications.

The CCC HEZ serves a higher proportion of Black-African American participants (Figure 4) than the proportion of Black-African Americans in the total population of the HEZ. The CCC HEZ reports ongoing training in cultural competency, trauma informed care, and health literacy for 21 CCC HEZ partners to ensure the highest quality of care for their diverse participants.

Figure 4.



Data Sources: HEZ program data and Nielsen Pop-Facts Demographics 2014.

Greater Lexington Park/St. Mary's County (Rural)
Jurisdiction: St. Mary's County
Community: Greater Lexington Park (zip codes 20634, 20653, 20667; population 34,035)
Coordinating Organization: MedStar St. Mary's Hospital (MSMH)
Project Title: Greater Lexington Park Health Enterprise Zone (GLP HEZ)

Goals and Intended Outcomes. The goals of the GLP HEZ include: (1) expand and integrate the primary care and community health workforce through the recruitment of primary care, behavioral health, and dental service providers in the HEZ; (2) reduce unnecessary ED usage and costs for hypertension/high blood pressure, asthma, and diabetes, and reduce unnecessary readmissions for congestive heart failure and chronic obstructive pulmonary disease (COPD); (3) improve health outcomes for racial and ethnic minority populations in the HEZ through the implementation of promising culturally competent practices and evidence-based approaches in health promotion; and (4) increase community resources in the HEZ that will facilitate access to local health care and human services and improve the physical environment of the HEZ.

Target Community. According to 2010 US Census data, approximately 28.0% of the county population lives in Greater Lexington Park, 31.6% of whom are Black-African American and 7.4% of whom are Hispanic. Residents of Greater Lexington Park have a lower per capita income and a higher unemployment rate than the rest of the county, and the area significantly lacks primary care providers. Medicaid panels are closed in most practices and uninsured and underinsured residents are forced to seek both primary and crisis care in the ED. According to MSMH, 30.6% of patients accessing their ED in FY 2012 were from the HEZ zip codes.

Key Interventions and Milestones to Date (see GLP HEZ program data in Appendix A, Table 3). The GLP HEZ has added 16.2 FTEs in the HEZ, including 2.5 FTE licensed independent practitioners and 3.2 FTE other licensed or certified health care practitioners, and they have secured commitments from an additional primary care physician, a physician assistant, and a nurse practitioner, who will begin providing services in the HEZ over the next two quarters. The HEZ practitioners, along with existing provider resources, have collectively provided 22,139 visits to 3,847 patients through their enhanced HEZ practices. This includes patients served at MSMH's "Get Connected to Health" mobile clinic (1,415 individuals), which

has been providing in-kind primary care services, integrated with Walden Sierra behavioral health services, to patients who live in the HEZ until the new Community Health Center (East Run Medical Center) is opened (anticipated in spring 2017).

The GLP HEZ also facilitated the opening of the MSMH Primary Care office to provide services to HEZ residents while the Community Health Center is under construction. Despite staff turnover, this practice provided services to 981 patients as of September 2016. Walden Sierra provided behavioral health services to 2,335 patients as of September 2016 and was able to place a buprenorphine-certified psychiatrist in the HEZ to assist with opiate-addicted patients who overuse ED services. Walden Sierra has also implemented the E-Prescribe prescription system to assist with medication prescription and refill processes and to reduce lost or misplaced prescriptions, which may also put patients at higher risk of ED use. Walden Sierra continues their partnership with Genoa Pharmacy, which accepts Medicaid for medications that other pharmacies do not. Finally, a partnership with Axis Health, initiated in Year 3 of the HEZ Initiative, has facilitated the provision of full time psychiatric services in the MSMH Primary Care office.

The GLP HEZ's care coordination program provides medical stability to at-risk patients, including social support and navigation services, through 2.5 FTE Neighborhood Wellness Advocates (NWAs) and 2 FTE nurse care coordinators. The care coordination program has served 1,464 patients to date through home visits, clinic appointments, and phone calls, and the NWAs provided 11,359 outreach encounters. High utilizers, identified through a daily ED visit report and a daily discharge report, are assigned to NWAs and assessed for risk of hospitalization or readmission. The NWAs and nurse care coordinators then reach out to these individuals to assist in developing and attaining self-management goals. Education is provided through evidence-based programs to increase self-management skills for targeted diseases. A Walden Sierra behavioral interventionist accompanies the NWAs on home visits to complete Screening, Brief Intervention, and Referral to Treatment (SBIRTs) and provides SBIRTs in clinic, hospital, and community settings. The care coordination efforts are supported by an outpatient care coordination software system, which is linked to the hospital's EHR, to document all encounters with assigned patients and facilitate communication among providers.

The GLP HEZ developed a 16-stop Mobile Medical Route, which has provided 15,364 rides to medical appointments, pharmacies, grocery stores, parks, and other human services as of September 2016, and has equipped a mobile dental van, which provided services to 77 patients. The GLP HEZ transportation program has expanded to include a specialty service dedicated to transporting clients to doctors' appointments inside and outside the HEZ and has experienced more demand than is possible to meet, providing 738 rides to date.

The partnership between Greater Baden Medical Center (an FQHC in the region), Cherry Cove Builders, and MSMH broke ground on the East Run Medical Center, which is anticipated to open in spring 2017. This Community Health Center will house a medical clinic, dental services, behavioral health services, as well as space for the NWAs and care coordinators assigned to the HEZ. Specialty services are anticipated to be available on a weekly basis.

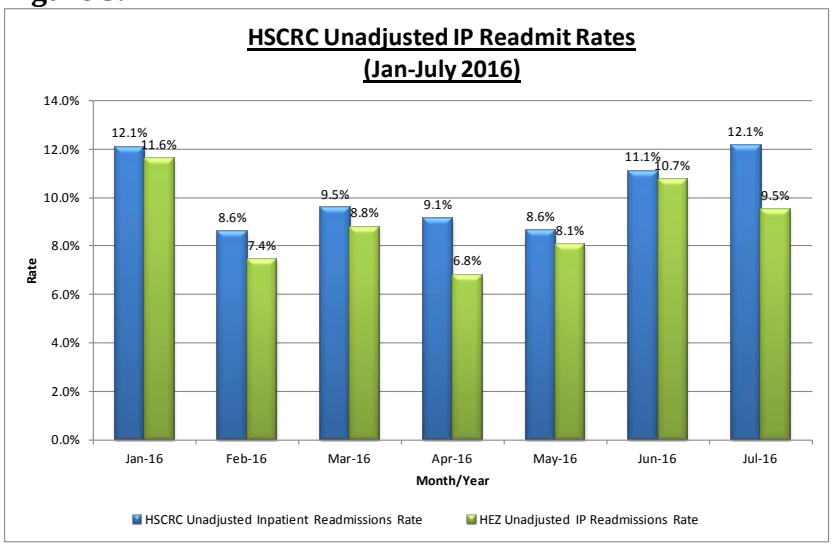
MSMH all-cause ED visit counts among patients from the HEZ decreased between FY 2012 and FY 2016 and the percentage of MSMH patients accessing the ED who were from the HEZ zip codes remained unchanged at just over 30.0% (Table 2). This may suggest that the HEZ interventions facilitated utilization reductions in the HEZ similar to those among individuals not in the HEZ, and thus the percent of ED visits from the HEZ stayed constant over this time period. This would be noteworthy given the HEZ's higher risk population and the Affordable Care Act's effect of increasing ED use in newly insured individuals not effectively using primary care.[1] Further, these numbers could be evidence that some of the HEZ interventions may have reached non-HEZ individuals.

Table 2. ED Visit Counts, HEZ and MSMH

Fiscal Year	ED Visits, HEZ	Total ED Visits, MSMH	Percent of patients accessing the ED who were from the HEZ
FY 2016	15,987	52,429	30.49%
FY 2015	16,027	52,005	30.82%
FY 2014	16,131	53,084	30.39%
FY 2013	17,063	56,806	30.04%
FY 2012	17,422	57,394	30.36%

MSMH's unadjusted inpatient readmission rate among patients from the HEZ dropped in the first seven months of 2016, while the hospital's rate overall was the same in July as it was in January (Figure 5). The unadjusted readmission rates fluctuated for both the hospital and the HEZ during that time period, but the HEZ's rate was consistently lower than the hospital's rate.

Figure 5.

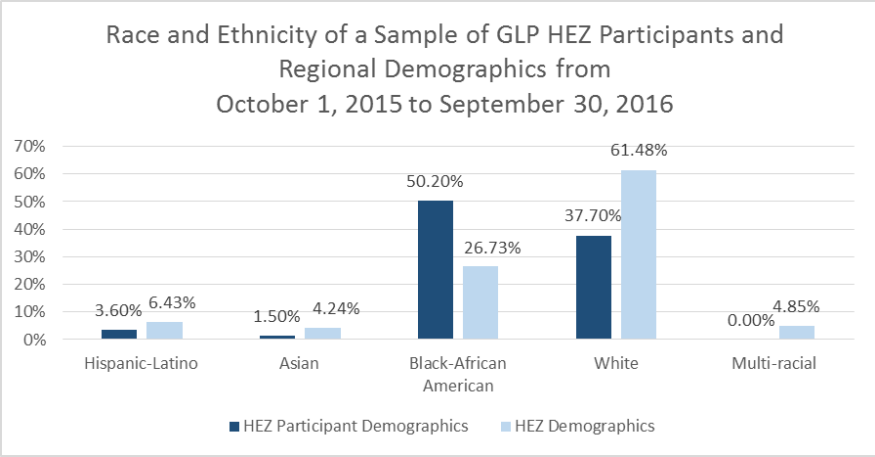


HSCRC = Health Services and Cost Review Commission; IP = Inpatient

[1] American College of Emergency Physicians, "ER Visits Continue to Rise Since Implementation of Affordable Care Act," 4 May 2015, Accessed 15 February 2017 <http://newsroom.acep.org/2015-05-04-ER-Visits-Continue-to-Rise-Since-Implementation-of-Affordable-Care-Act>.

The GLP HEZ serves a higher proportion of Black-African American clients than the proportion of Black-African Americans in the total population of the HEZ (Figure 6). To ensure the highest quality of care for all patients and participants, the GLP HEZ provided trauma informed care training for HEZ and hospital staff in September 2016.

Figure 6.



Data Sources: HEZ program data and Nielsen Pop-Facts Demographics 2014.

Prince George's County Health Department/Capitol Heights (Suburban)
Jurisdiction: Prince George's County
Community: Capitol Heights (zip code 20743; population 38,626)
Coordinating Organization: Prince George's County Health Department
Project Title: Prince George's County Health Enterprise Zone (PGCHEZ)

Goals and Intended Outcomes. PGCHEZ seeks to achieve the following primary goals by December 31, 2016: (1) increase accessibility and availability of primary care services in zip code 20743; (2) improve health outcomes for the residents of zip code 20743; (3) increase the number of CHWs delivering services; (4) increase community resources for health; and (5) reduce preventable hospitalizations and ED visits.

Target Community. Capitol Heights leads the county in poor health outcomes including low birth weight infants, late or no prenatal care, and teen births. The proportion of Capitol Heights residents living below the federal poverty level (FPL) and 50% below FPL are 13.6% and 6.3%, respectively, in contrast to 7.9% and 3.9% for the county. Twenty-three percent of residents have not completed high school. The national median for violent crimes is 4 per 1,000 residents, but in zip code 20743, it is 5.5 per 1,000. The Medicaid enrollment and WIC participation rates in the HEZ exceed State rates. Inappropriate hospital utilization is also a problem for Capitol Heights, which leads the county in ambulatory care-sensitive hospital admissions.

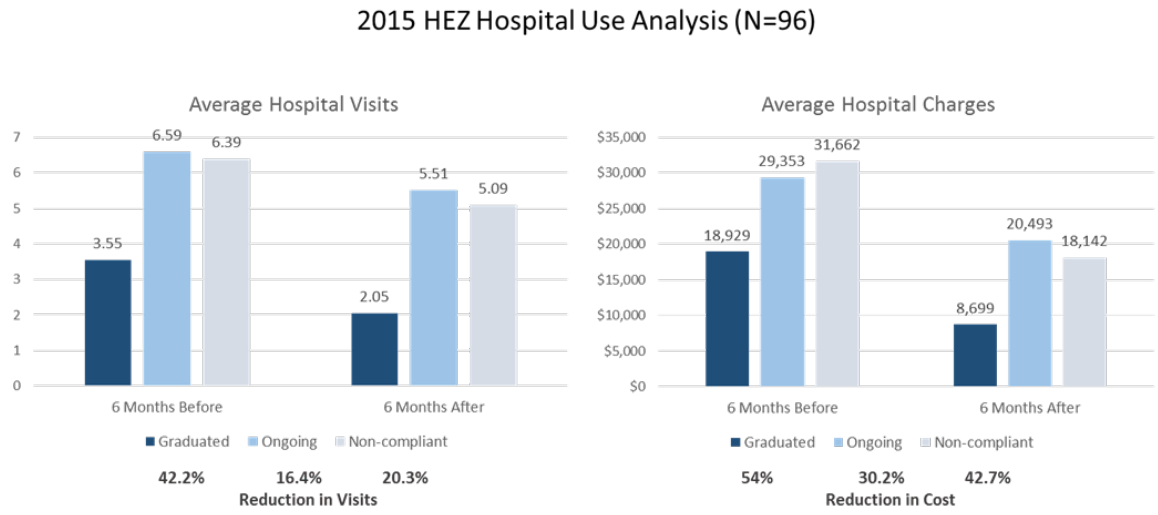
Key Interventions and Milestones to Date (see PGCHEZ's program data in Appendix A, Table 4). PGCHEZ's key program interventions include expanding the primary care workforce in the HEZ to staff five newly established PCMH hubs and satellite offices. As of September 2016, clinics operated by Global Vision, Gerald Family Care, and Family and Medical

Counseling have been opened, and Greater Baden Medical Services and the Prince George's County Health Department have been expanded. A total of 18.3 FTEs have been added or retained, including 3.9 FTE licensed independent practitioners and 3.85 FTE other licensed or certified health care practitioners. These HEZ practitioners and their enhanced practices have provided 63,748 visits to 38,343 patients. The HEZ's fifth PCMH, Dimensions Specialty Care Center Capitol Heights, opened on December 20, 2016.

The PGCHEZ is also working to improve the quality of primary care by promoting the use of a Wellness Plan, an individualized care plan integrated into each patient's EHR. Wellness Plans have been created for 2,232 HEZ patients across the PGCHEZ PCMHs. The PGCHEZ CHW Care Coordination Program works with the HEZ partner hospitals (Prince George's Hospital Center and Doctors Community Hospital) to coordinate hospital transitions to prevent hospital readmissions among HEZ residents and to complete care pathways to address client medical and social needs. As of September 2016, 896 patients have been served through the CHW Care Coordination Program and 11,574 resource connections have been completed. Care Coordination Program staff meet regularly with the staff of Prince George's Hospital Center, Doctors Community Hospital, and Amerigroup, a managed care organization, to review clients' progress.

An analysis of outcome data from a sample of 96 care coordination participants divided participants into those who graduated from the CHW Care Coordination Program, those who were discharged as non-compliant or lost to follow-up, and those who are ongoing with the Care Coordination Program. Findings show that graduates from the CHW Care Coordination Program experienced a 42.2% decline in the number of hospital visits and a 54.0% reduction in average hospital costs when comparing the six months prior to participation in the program to the six months after participation (see Figure 7). Even non-compliant program participants experienced a 20.3% reduction in hospital visits and a 42.7% reduction in average hospital costs from the six months prior to participating in the care coordination program to the six months after participating in the program. The analysis excluded patients who moved, died, or had incomplete information for analysis purposes.

Figure 7.

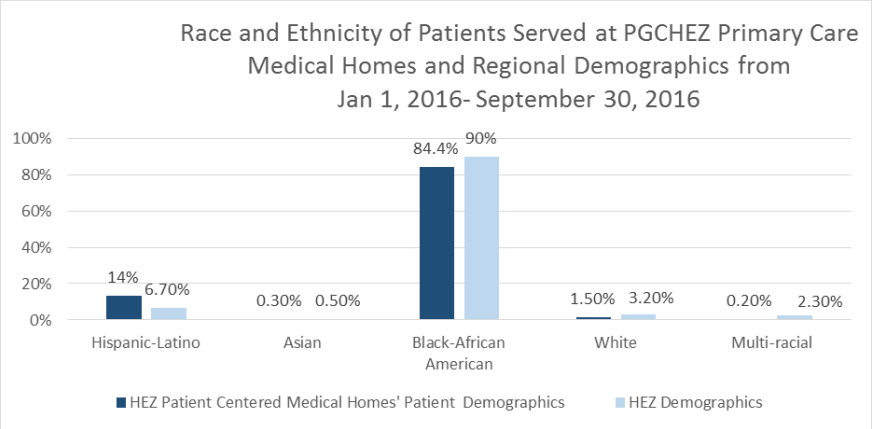


The PGCHEZ also initiated a Community Care Coordination Team in October 2015 with partners from around the county who help manage patients, including faith-based and social service organizations, community centers, community-based organizations, hospitals, private practices, and FQHCs, among others. Patients are elevated to the Community Care Coordination Team if gaps remain following CHW intervention. The care coordination efforts are supported by a web-based case management software system, which documents client assignments, case management activities, resource connections, pathways initiated and completed, and utilization of health care services.

The PGCHEZ developed a county Public Health Information Network (PHIN) which is linked to Maryland's health information exchange, CRISP, and allows for laboratory, radiology, and clinical records to be delivered to HEZ providers from hospitals and for the sharing of immunization information with DHMH. The PGCHEZ is currently finalizing PHIN connectivity to the PCMHs, the Care Coordination Program data system, and to several partner organizations and clinics in Maryland and Washington, DC.

The PGCHEZ is also working to ensure cultural, linguistic, and health literacy competency of HEZ operations by launching a comprehensive health literacy campaign and requiring all HEZ providers and their staff to complete cultural competency training. The PGCHEZ serves a higher proportion of Hispanic/Latino clients than the proportion of Hispanic/Latino individuals in the total population of the HEZ (Figure 8). CHWs also completed training in management of chronic conditions, diabetes self-management, trauma informed care, and with the Maryland Health Connection to become certified to register clients for health insurance. The health literacy campaign designed, produced, and disseminated thousands of health literacy cards, booklets, and kits to residents of the HEZ. The PGCHEZ is also piloting a mobile app with HEZ residents, which offers local health literacy resources and assistance, and has trained four University of Maryland students to be "Health Literacy Ambassadors" to facilitate health literacy workshops in the HEZ. Finally, two "Prime Time Sister Circles", groups focusing on stress management, nutrition, fitness, and hypertension, have been initiated at a church and city hall serving the HEZ.

Figure 8.



Data Sources: HEZ program data and Nielsen Pop-Facts Demographics 2014.

West Baltimore Primary Care Access Collaborative (Urban)
Jurisdiction: Baltimore City
Community: West Baltimore (zip codes 21216, 21217, 21223, 21229; population 137,823)
Coordinating Organization: Bon Secours Baltimore Health System
Project Title: West Baltimore Primary Care Access Collaborative (WBPCAC)

Goals and Intended Outcomes. WBPCAC has committed to improve health outcomes in its targeted areas with the following specific and quantifiable goals: (1) successfully connect 1,125 high utilizers to a CHW and provide prolonged support to 450 high utilizers; (2) complete 4,725 CHW encounters via home visits, phone, health screenings, and clinic visits; (3) successfully connect 100 high utilizers to a primary care provider; (4) increase by 3% the percentage of WBPCAC hypertensive adult patients with blood pressures lower than 140/90 mmHg; (5) increase by 3% the percentage of WBPCAC diabetic adult patients with blood sugar under control; (6) increase by 3% the percentage of WBPCAC diabetic adult patients with LDL-C < 100 mg/dL; (7) complete biometric screens with 10% of fitness class participants; (8) increase by 16 the number of skilled primary care professionals on the HEZ provider practices' care teams; (9) reduce by 5% the number of preventable ED visits among high utilizers enrolled in the WBPCAC care coordination program; (10) reduce by 5% the number of preventable hospitalizations among high utilizers enrolled in the WBPCAC care coordination program; (11) reduce by 5% the number of preventable readmissions among high utilizers enrolled in the WBPCAC care coordination program; and (12) reduce by 10% unnecessary costs of caring for high utilizers in the WBPCAC care coordination program.

Target Community. The targeted area fully or partially includes 16 neighborhoods which, combined, have higher disease burden than most other communities in Maryland, and establish the lower extremes for health disparities in Baltimore City and the State across all major chronic illnesses. Further contributing to poor health outcomes is inadequate access to health care services, earning the community's designation both as a medically-underserved area and medically-underserved population. Black-African Americans make up more than 81.0% of the HEZ population, compared to 30.0% and 63.0% in Maryland and Baltimore City, respectively. The high percentage of Black-African American and low-income residents in the HEZ, where median household income is $31,749 compared to $72,483 in Maryland overall, contributes to the disproportionate prevalence of ethnically and socioeconomically-linked health conditions such as diabetes, obesity, asthma, and low birth weight.

Key Interventions and Milestones to Date (see the WBPCAC program data in Appendix A, Table 5). WBPCAC has improved access to and the quality of health care by adding 9.8 FTEs in the HEZ. The "Jobs Added" numbers for WBPCAC have been revised downward from previous estimates due to a change in reporting definitions during Year 2. WBPCAC's efforts to build capacity in the target zip codes have also included helping practitioners obtain income tax credits (totaling $148,645) and loan repayment assistance (for 12 practitioners) for working in the HEZ; facilitating PCMH trainings for clinical partners; providing 84 scholarships (totaling more than $250,000) for HEZ residents pursuing health and social service professions; providing internship opportunities to students at the University of Maryland School of Nursing and Coppin State University; and enabling enhanced care plans for HEZ residents among HEZ clinical partners due to the many self-management and community supports provided through the HEZ.

The HEZ-enhanced practices have collectively provided 187,981 visits to 118,339 HEZ residents. WBPCAC also provided CHW, cultural competency, trauma informed care, and other trainings to better serve a diverse population. WBPCAC serves higher proportions of Hispanic-Latino and Asian clients and patients than the proportions of Hispanic-Latinos and Asians in the total population of the HEZ (Figure 9).

WBPCAC has five CHWs for the HEZ, who have served 10,368 patients. Four of the CHWs serve as liaisons to five partner hospitals and one CHW serves as liaison to public and senior housing facilities in the HEZ. They engage patients through clinic visits, ED contacts, home visits, and phone calls in a two-tiered care coordination program. The care coordination program focuses on hospital-to-community transitions and development of a care plan to prevent high utilizers from being readmitted to the hospital or using the ED within 30 days post discharge (Tier I). Tier II includes high utilizers who need prolonged support beyond the initial 30 days. The CHW team is led by a nurse care coordination manager and the program is supported by a web-based data platform that uses a validated health screening tool to predict risk of hospital readmission and ED utilization within 30 days of discharge. As of September 2016, WBPCAC reports enrolling 1,180 high utilizers in the Tier I intervention and 475 in the Tier II intervention.

A full analysis of hospital utilization pre and post intervention among care coordination participants is pending and should be available by early 2017. In a sample of 361 care coordination participants, however, 11% had been readmitted to a hospital between July and September 2016, compared to 17% during the same period in 2015 in a sample of 293 care coordination participants (Table 3). While these data do not suggest any decrease at the individual level between these two time periods (because the data were not measured on the same individuals over time), they may suggest decreases at the group level due to improvements in the program.

Table 3. WBPCAC Care Coordination Readmissions

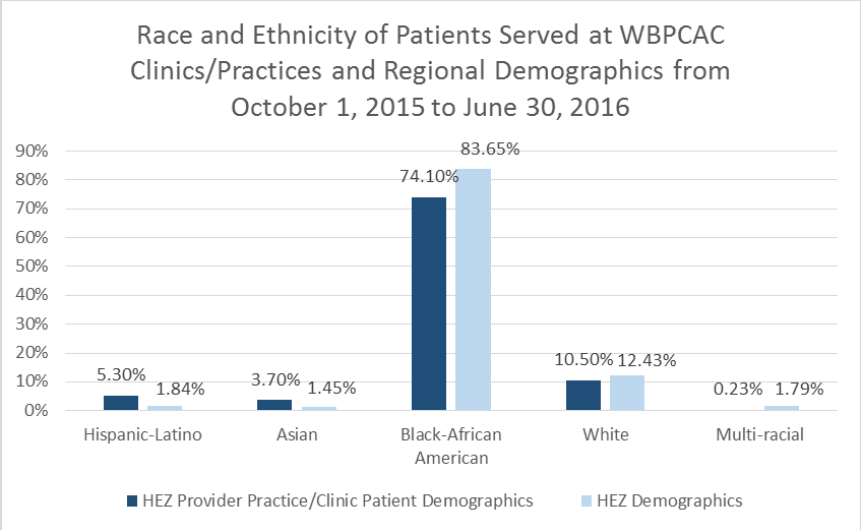
HEZ Care Coordination Readmission Data - Year 3									
Month	***July***	***August***	***September***	***October***	***November***	***December***	***January***	***February***	***March***
Total # of Clients	95	103	95	77	96	163	125	132	122
Total # of Readmissions	16	15	20	10	18	27	16	8	20
Readmission Rate	16.8%	14.6%	21.1%	13.0%	18.8%	16.6%	12.8%	6.1%	16.4%
Quarterly Rate		**17%**			**16%**			**12%**	

HEZ Care Coordination Readmission Data - Year 4									
Month	***April***	***May***	***June***	***July***	***August***	***September***	***October***	***November***	***December***
Total # of Clients	125	119	115	109	138	114	80		
Total # of Readmissions	21	16	9	11	14	14	6		
Readmission Rate	16.8%	13.4%	7.8%	10.1%	10.1%	12.3%	7.5%	N/A	N/A
Quarterly Rate		**13%**			**11%**			**N/A**	

As of September 30, 2016, a chronic disease self-management course has been implemented with 430 participants, and fitness classes have been provided to 4,151 HEZ residents. A sample of fitness class participants (n=2,017) reported an average weight loss of 15 lbs and a reduction in BMI of 1.5. A total of $130,000 was provided through 16 mini-grants to community based-organizations that served 25,000 residents with community cardiovascular disease prevention programs. Finally, 6,121 residents have enrolled in the HEZ's Passport to Health program, which enables tracking of the utilization of HEZ programs and services. WBPCAC's evaluation team conducted a care coordination client satisfaction survey. Among 38 care coordination

participants, 100% said they agreed that they 'understand the importance of taking medications as prescribed' and 'know the signs and symptoms to report to my doctor.'

Figure 9.



Data Sources: HEZ program data and Nielsen Pop-Facts Demographics 2014.

D. Year Four Successes

Expanding capacity to deliver services. Across all five HEZs, 22 health care delivery sites (defined as locations where medical, dental, or mental health assessments and disease management can be provided) have been opened or expanded to provide primary care, dental, and/or behavioral health services. These health care delivery sites include private practices, hospital clinics, community clinics, FQHCs, mobile clinics, school-based wellness centers, and behavioral health clinics.

HEZ practitioners provide primary care, dental, or behavioral health services in the HEZ, due to the efforts of the HEZ Initiative. The practitioners may or may not receive HEZ funding. The HEZs have successfully recruited 28.3 FTE HEZ practitioners as of September 30, 2016, including 11.7 FTE licensed independent practitioners (which includes physicians, psychiatrists, physician assistants, and advanced practice nurses) and 16.6 FTE other licensed or certified health care practitioners (which include registered nurses, licensed clinical social workers, certified medical assistants, and certified addictions counselors). The HEZs collectively reported a total of 15.85 FTE CHWs and 78.4 total FTEs added in the HEZs. The "Jobs Added" numbers have continually been revised downward from previous estimates due to a change in reporting definitions following a data audit by the State HEZ Data Team, a subset of the State HEZ Team. Recruitment and retention efforts in the HEZs have been enhanced through the HEZs' efforts to help practitioners and other qualified employees obtain income tax credits and loan repayment assistance. Through December 2016, tax credit awards total $203,938 and loan repayment assistance has been provided for 16 practitioners.

Expanding capacity to deliver services in the HEZs has also included a variety of system-level efforts to better coordinate, integrate, and increase access to patient-centered care in the HEZs,

especially for complex patients. These efforts include PCMH, CHW, trauma informed care, health literacy and cultural competency trainings, among others; co-locating practitioners and services in HEZ clinical sites; enabling enhanced care plans among HEZ clinical partners for HEZ patients due to the many self-management and community supports provided through the HEZ; expanding clinic hours and walk-in appointment availability; enhancing and linking HEZ data systems to facilitate data sharing, communication, timely access to care and medications, and co-management of complex patients; using population health tools, such as disease registries, to identify, monitor, and manage patients with chronic diseases; increasing use of language lines and CHWs to reduce language and cultural barriers; providing scholarships to HEZ residents pursuing health and social service professions to increase the local health care workforce pipeline; providing internship training opportunities to local public health, nursing, and social work students; ensuring timely appointments with care coordinators following ED visits or inpatient admissions; and using individual level data, including race and ethnicity, to identify disparities and target medical, social, and systems interventions.

Providing new or expanded primary care, behavioral health, and dental services in the HEZs. A total of 304,330 patient visits were provided by HEZ practitioners and their enhanced practices to 169,842 patients between October 1, 2013 and September 30, 2016.

Expanding access to self-management supports and community-enabling interventions. Care Coordination programs have been developed and implemented in all five HEZs. These programs employ CHWs and nurse case managers to identify and engage high utilizers, provide home, clinic, and/or hospital visits, and connect patients to primary care, behavioral, and other health and social services. These programs were enhanced in Year 3 through the development of web-based data systems that facilitate the identification, monitoring, and management of at-risk patients, which led to significant increases in participant numbers as the HEZs entered Year 4. Community-enabling interventions such as disease self-management, medication reconciliation, and weight management programs; smoking cessation workshops; fitness classes; walking groups; nutrition classes; blood pressure, behavioral health, domestic violence, and diabetes screenings; health education and outreach; health literacy campaigns; and transportation support have also been developed or expanded in the HEZs.

Improving health information technology. All HEZs have made significant improvements in health information technology infrastructure and capacity, including the development of "patient-tracker" data systems, a county-wide health information exchange (PHIN), and care coordination software applications to facilitate the identification, monitoring, and management of at-risk patients. The HEZs are also working with HEZ practitioners to help them transition and link to EHRs.

Improving cultural competency. All HEZs have completed OMHHD cultural competency trainings. These trainings focus on the national Culturally and Linguistically Appropriate Services standards, efforts to promote workforce diversity and health literacy, and steps to becoming more culturally and linguistically competent.

Enhancing community capacity. All HEZs are engaging the participation of HEZ partners and residents through the HEZ coalitions and community advisory boards. Further, the HEZ

coalitions have demonstrated significant ability to be responsive to the State, their partners, and their communities, and to successfully adapt to a changing health care environment.

E. Year Four Challenges

The HEZs have encountered challenges while implementing their work plans. The State HEZ Team is working closely with the HEZs to address challenges through the provision of TA (see Section V). Key challenges and strategies to overcome them include:

Planning for sustainability. The HEZs have encountered challenges in their attempts to secure commitments and funding to sustain either part or all of their current programs.

Strategy: The HEZ Initiative was awarded a grant from the Robert Wood Johnson Foundation (RWJF) for the period of July 2016 through June 2017 to support a sustainability planning process with Maryland's HEZ Initiative, including development of an HEZ sustainability plan. An HEZ sustainability work group was formed, consisting of leadership from the HEZs and the State HEZ Team, to co-lead the HEZ sustainability planning efforts. Expected outcomes include convening HEZ sustainability work group meetings (which occurred in July, August, and October of 2016); defining HEZ sustainability goals and objectives; planning and implementing an HEZ Sustainability Summit (which occurred on November 3, 2016); working with a contractor to develop HEZ-specific videos to be used to promote the HEZs (which are being developed between November 2016 and January 2017); and working with a contractor to support the development of the HEZ sustainability plan (which was initiated in November 2016). The final sustainability plan should be available in June 2017. In the meantime, the HEZs are working with their local partners to identify and explore opportunities for sustainability.

Practitioner recruitment challenges. While utilization of the HEZ income tax credits increased significantly in Years 3 and 4, and recruitment and retention efforts improved across the HEZs, some HEZs, especially in rural areas, continue to report challenges in recruiting practitioners. Loan repayment assistance is limited due to program requirements, such as the Janet L. Hoffman Loan Assistance Repayment Program requirement that recipients attended a university in Maryland. HEZs have requested more flexibility in the types of recruitment and retention incentives they can provide.

Strategy: HEZs were permitted to utilize funding that was budgeted by the HEZs for tax incentives to provide hiring and productivity bonuses to HEZ practitioners who couldn't benefit from, but otherwise qualified for, the HEZ hiring incentives. In 2015 and 2016, DHMH increased marketing efforts and TA to the HEZs regarding the loan repayment programs and HEZ tax credits. These efforts likely contributed to the significant increase in tax credit applications for tax years 2014 and 2015.

Attracting patients and participants to the new HEZ practices and programs. While each of the HEZs experienced challenges in attracting patients and participants to the new HEZ practices and programs, several strategies were successfully employed in Year 3 to address these challenges, and participation significantly improved into Year 4. These challenges include educational and health literacy barriers among target patients; changing longstanding patient

health care utilization patterns; lack of awareness of the new programs and services; and lack of transportation to new practices and programs, among others.

Strategy: The State HEZ Team worked with the HEZs to define service volume targets that are appropriate for the service type and to better understand and remove barriers to service uptake in the community. In some HEZs this required staffing changes; in several HEZs it required delegating certain activities to experts via contracts or through the use of evidence-based models and approaches. The HEZs were also successful in the development of data platforms that facilitate the identification, engagement, and management of high utilizers. This data enables providers to identify and link their high utilizers directly with HEZ services and programs. Further, the HEZs used program data to establish appropriate targets for CHW outreach and case management, and several CHW programs were expanded to enhance outreach to link their target populations to HEZ programs and services. Finally, promotional videos for each HEZ were developed in late 2016 and social marketing and health literacy campaigns have been employed in most HEZs to help attract patients and participants to their practices and programs.

Collecting and connecting data across multiple provider sites. Most of the HEZs include multiple care delivery sites and practitioners. Not all sites have EHR systems or EHR systems that connect with other EHR systems or to CRISP. The HEZs are confronting the challenges involved with collecting and reporting individual patient clinical outcomes data and aggregating this data across multiple different EHR systems and paper-based systems.

Strategy: While collecting and connecting data remained a challenge for several HEZs in Years 3 and 4, overall the HEZs have made significant progress in this area. Four HEZs have developed their own "patient tracker" systems to enhance HEZ care coordination efforts and, depending on the levels of connectivity, are able to report some utilization and outcomes data among HEZ patients across the HEZs' programs and services. The HEZs are also working with CRISP to pilot pre and post care coordination analyses and reports on hospital utilization among participants.

Acquiring suitable buildings for new practices and programs. Several HEZs have experienced delays in opening new clinics due to the challenges of finding, constructing, and/or renovating suitable buildings in the HEZs in which to open the clinics or practices.

Strategy: HEZs have worked with partners and county governments to access funding for the necessary building and/or renovations and nearly all proposed expansions and openings will be completed by the end of the HEZ funding period in March 2017.

ED Visit Rates. All-cause ED visit rates increased slightly for Maryland and in four of the HEZs from 2009 to 2014 and then decreased only slightly from 2014 to 2015 (see Appendix B).

Strategy: The HEZs have employed several strategies to combat this challenge. Strategies have included expanding care coordination programs beyond hospital-to-community transitions (following inpatient admission) to include patients who have utilized the ED. The HEZs have also worked to embed services, such as behavioral health services, in EDs; to improve access to

medications through electronic prescription services; to expand access to physicians certified to prescribe buprenorphine; and to expand transportation services, especially in the rural HEZs.

Complex patients. There is limited peer-reviewed research literature to date regarding evidence-based approaches to identifying, engaging, and managing high utilizers[2]. Further, there is limited understanding of patterns of utilization among high utilizers, which may be driven by a number of factors, and the implications of these patterns for program design. For example, persistent high utilizers would likely require different interventions than those with limited periods of high utilization. There are key unanswered questions regarding program design and effectiveness, including which patients can be effectively engaged in care, what kinds of utilization are changeable, when services should be short term versus ongoing, which patients benefit from which services, and where the services should be based or delivered. The HEZs have met similar questions and challenges in the design and development of care coordination programs for medically and socially complex high utilizer patients.

Strategy: The HEZs have employed a number of strategies to improve identification and care for high utilizer patients. Several HEZs have replicated promising practices and approaches from other states. One HEZ contracted out their care coordination services to a Maryland organization with significant care coordination experience and an evidence-based approach. The HEZs have also developed and refined data platforms that facilitate the identification, engagement, and management of high utilizers, as well as quality improvement processes to inform continued program development. The HEZs have provided extensive training to HEZ staff and practitioners to improve their ability to manage complex patients, including trauma informed care, Mental Health First Aid, healthy eating on a budget, motivational interviewing, asthma management, cultural competency, health literacy, the Affordable Care Act, and integrated interagency care, among others. Further, the HEZs have increased efforts to recruit and integrate mental health professionals, including psychiatrists, social workers, and behavioral interventionists, into the efforts of the HEZs. Finally, the HEZs have developed interventions to address social determinants of health such as transportation, food deserts, housing, educational attainment, work force development, health care access, safe places for physical activity, and language and cultural barriers.

IV. Measuring Progress

A. Incentives Available to the HEZs and the Impact of Incentives in Attracting and/or Retaining Practitioners to the HEZs

The HEZ Initiative provides a range of public incentives and resources to help attract private health care practitioners to serve in underserved communities including tax credits and loan repayment assistance. Tax credits and loan repayment assistance were included in the Act as incentives for recruiting and retaining providers in these underserved areas. The Act requires DHMH and the CHRC to include in the annual report to the Governor and Maryland General Assembly the number and types of incentives utilized in each HEZ, and evidence of the impact

[2] Tracy L. Johnson, Deborah J. Rinehart, Josh Durfee, Daniel Brewer, Holly Batal, Joshua Blum, Carlos I. Oronce, Paul Melinkovich and Patricia Gabow. For Many Patients Who Use Large Amounts Of Health Care Services, The Need Is Intense Yet Temporary. Health Affairs, 34, no.8 (2015):1312-1319.

of tax and loan repayment incentives in attracting practitioners to the HEZs. This information is provided below. The Act also requires the annual report to include evidence of the impact of incentives offered in the HEZs in reducing health disparities and improving health outcomes. Important outcome measures by which to assess this improvement, specified in the Act, are hospital admission rates, readmission rates, and hospital costs (see Section IV).

Loan Repayment

Loan repayment assistance was provided in the Act as an incentive to recruit and retain providers to HEZs. DHMH is collaborating with the Maryland Higher Education Commission (MHEC) to offer loan repayment to eligible practitioners in HEZs through two existing State programs, the Maryland Loan Assistance Repayment Program (MLARP) and the Janet L. Hoffman Loan Assistance Repayment Program. These State programs are being utilized to maximize current HEZ dollars. MLARP (State and federal funds) offers loan repayment assistance to primary care physicians and physician assistants. The Janet L. Hoffman Loan Assistance Repayment Program offers loan repayment to nurses, nurse practitioners, physician assistants, and social workers.

To date, 16 providers have been awarded loan repayment (Table 4), 12 from the WBPCAC HEZ and four from the Dorchester/Caroline CCC HEZ. DHMH has increased marketing efforts for loan repayment programs. The increased marketing has brought in more applications for loan repayment, but a limited number of these applications are from practitioners in the HEZs. The fall 2016 cycle for MLARP will be finalized at the beginning of 2017, so these numbers are still being determined.

Table 4. Providers Who Applied for Loan Repayment, Were Eligible, and Total Awarded

	Spring 2013	**Fall 2013**	**Spring 2014**	**Fall 2014**	**Spring 2015**	**Fall 2015**	**Spring 2016**	**Fall 2016**	
	Year 1	Year 1	Year 2	Year 2	Year 3	Year 3	Year 4	Year 4	**Total**
Total number of HEZ providers that applied for loan repayment	1	5	1	2	2	2	6	TBD	**19**
Total eligible for loan repayment	1	3	1	2	2	2	6	TBD	**17**
Total number that accepted loan repayment award	1	2	1	2	2	2	6	TBD	**16**

Tax Credits

Two types of tax credits are offered as incentives by the Act: hiring tax credits and income tax credits. The tax credits can be applied to practitioner income earned or new hires in the HEZs between January 1, 2013 and June 30, 2017. All tax credit materials for both types of tax incentives have been developed and are available to the HEZs. DHMH conducted a webinar in June 2015 targeted to the HEZs to provide further education and awareness about tax credits. Following the webinar, there has been an increase in tax credit applications.

The Health Care Practitioner Income tax credit launched in April 2014. Six applications were received for tax year 2013 (Table 5), and five practitioners received a tax credit. These practitioners, all from the WBPCAC HEZ, received tax credits totaling $26,205.

Applications for tax year 2014 exceeded expectations and 21 applications have been received. Twenty of these applications have been approved and, as of December 2016, $101,789 has been awarded in tax credits for tax year 2014. Ten providers from the WBPCAC HEZ, nine providers from the Caroline/Dorchester CCC HEZ, and one provider from the GLP HEZ have received 2014 tax credits to date.

There have been 17 applications received for tax year 2015. Thirteen of these applications have been approved as of December 2016, and $75,944 has been awarded for 2015 tax credits. Of the 13 providers that received tax credits, six are from the WBPCAC HEZ, six are from Caroline/Dorchester CCC HEZ, and one is from the GLP HEZ.

A total of $203,938 has been awarded for the Health Care Practitioner Income Tax Credit thus far for tax years 2013, 2014, and 2015. The HEZs budgeted a total of $264,145 in tax credits for Year 1, $228,290 for Year 2, $94,818 for Year 3, and $104,145 for Year 4.

Table 5. Health Care Practitioner Income Tax Credit - Number of Applications and Amount Granted Per Tax Year by HEZ

Tax Year	*HEZ*	*Number of Applicants*	*Number of Applicants that Received Preliminary Certification*	*Amount of Funding Requested by Applicants*	*Number of Final Applications Received*	*Number of Applicants that Received Final Certification*	*Amount of Funding Granted*
2013	WBPCAC	6	6	$33,488.89	5	5	$26,204.75
	Total	**6**	**6**	**$33,488.89**	**5**	**5**	**$26,204.75**
2014	WBPCAC	11	11	$87,711.49	10	10	$73,940.00
	CCC HEZ	9	9	$25,422.13	9	9	$27,190.00
	GLP HEZ	1	1	$659.00	1	1	$659.00
	Total	**21**	**21**	**$113,792.62**	**20**	**20**	**$101,789.00**
2015	WBPCAC	8	7	$43,716.91	6	6	$48,500.00
	CCC HEZ	8	8	$34,079.57	7	6	$23,877.00
	GLP HEZ	1	1	$3,567.00	1	1	$3,567.00
	Total	**17**	**16**	**$77,796.48**	**14**	**13**	**$75,944.00**

The eligibility criteria for the Employer Hiring Tax Credit was amended by the Maryland General Assembly during the 2014 session in HB 668 (Ch. 417 of the Acts of 2014) to clarify that both for-profit and non-profit entities are eligible to apply for this refundable tax credit. Pursuant to HB 668, DHMH promulgated regulations that took effect in December 2014. The

Employer Hiring Tax Credit was made available to HEZs in February 2015. To date the Hiring Tax Credit has not been utilized by any of the HEZs. One barrier to utilization is that a position must be filled for at least 12 months before an employer can apply for the credit and the credit was only made available as of February 2015.

A letter of support is required by the HEZ for all health care practitioners or entities that apply for a tax credit. This requirement was added to ensure that the practitioners or entities applying for tax credits are directly supporting the HEZ effort. Practitioners who provide services in an HEZ work "in accordance with" the proposal approved by the Secretary (i.e. work with an HEZ to meet its goals and objectives), and have established or expanded health care services in an HEZ, may be eligible to receive HEZ letters of support.

In utilizing the available State programs for recruitment incentives, several barriers have been identified that may affect the utilization of loan repayment programs. The statutory guidelines for MLARP may be too restrictive to accommodate all providers who are interested in loan repayment assistance through the HEZs. For example, the number of hours the provider is required to work per week and their specific work location (i.e. inpatient vs. outpatient) can be prohibitive. Barriers to the State-funded Janet L. Hoffman Loan Assistance Repayment Program include a maximum salary cap, and a requirement that the provider must have graduated from a Maryland State institution to be eligible. Also, tracking utilization of the Janet L. Hoffman Program is difficult because it is housed at MHEC and DHMH does not have access to application data. Further, the Program is expansive, providing loan repayment not only to health care providers, but to lawyers and teachers as well. Loan repayment incentives have been underutilized for the abovementioned reasons and because some HEZs have had a significant number of older practitioner applicants, who have already paid off their student loans.

DHMH is working closely with MHEC to identify possible solutions to these barriers that will make the programs more accessible to the HEZs. One strategy employed by two of the five HEZs was to request the use of recruitment incentives in the form of hiring and productivity bonuses for HEZ practitioners who could not benefit from, but otherwise qualified for, the HEZ hiring incentives.

Lastly, the tax credit application process for tax year 2016 is currently being reviewed and amended. Given that tax returns for tax year 2016 are not due until April 15, 2017, there will be a short turn-around for applicants because HB 668 sunsets on June 30, 2017. Applicants are required to provide a certified stamped copy of their tax return to verify the correct tax credit amount. The short window of time may not provide applicants with sufficient time to apply for and receive their credit. DHMH is working diligently with CHRC and the Comptroller's office to find a reasonable solution to this barrier.

B. Impact on Disparities, Health Outcomes, Admissions, Readmissions and Costs

The ultimate goals of the HEZ Initiative are to improve health outcomes within the HEZs generally, to improve health outcomes in racial and ethnic minority populations within the HEZs in particular, and thereby contribute to reductions in racial/ethnic and geographic health disparities in Maryland. Outcome measures to assess improvement, specified in the Act, are

hospital admission rates, readmission rates, and hospital costs. Baseline trends in health outcomes at the HEZ level and across the State in the years leading up to the HEZ Initiative are used to understand the HEZ Initiative's impact on health care outcomes and costs.

Data measures include the Agency for Healthcare Research and Quality's (AHRQ's) Prevention Quality Indicators (PQIs), readmission rates and charges, all-cause ED visit rates, and ED visit rates for target conditions in each HEZ. Data were prepared using the Maryland HSCRC inpatient discharge and outpatient ED visit records from Maryland's 48 hospitals. Data are not available on Maryland residents seeking care outside of Maryland. Therefore, data may be underreported, especially for the PGCHEZ, which is contiguous to Washington, DC, and allows Maryland residents easy access to DC hospitals.

The PQIs are composites of measures used with inpatient discharge data to identify quality of care for ambulatory care sensitive conditions that are avoidable hospitalizations in patients ages 18 years and older. Good outpatient care and early intervention can potentially prevent hospitalization and complications, or more severe disease. The PQI overall composite includes all measures for acute and chronic conditions; the PQI acute composite includes measures for acute conditions; and the PQI chronic composite includes measures for chronic conditions (Appendix B, Figures 1-3).

PQI overall, acute, and chronic composite rates were on a general downward trend for Maryland and all five HEZs from 2009 to 2014 (Appendix B, Figures 1-3). All HEZs had overall composite rates higher than Maryland overall, except the GLP HEZ. The CCC HEZ overall composite rate increased slightly from 2013 to 2015 and the PGCHEZ rate increased slightly from 2014 to 2015. The increase in the CCC HEZ, however, is still lower than their 2009 to 2011 rates and is most likely attributed to the increase in their acute composite rate. The PGCHEZ 2015 rate is still lower than their 2009 to 2013 rates. The ACHP, WBPCAC, PGCHEZ, and CCC HEZs had acute composite rates higher than Maryland overall in 2015, while the GLP HEZs had rates lower than Maryland overall. The GLP HEZ's chronic composite rate dropped below the Maryland overall rate in 2013 through 2015, and it is the only HEZ with a chronic composite rate lower than Maryland overall.

Unplanned readmissions, often expensive and preventable, measure quality of outpatient care. The HSCRC definition of all-cause unplanned readmissions has been refined from year to year. Therefore, readmissions data prepared for previous HEZ annual reports will not match data in this report. All-cause unplanned readmission rates were on a downward trend for Maryland and the HEZs from 2012 to 2015 (data are not available prior to 2012), except for an increase in the CCC HEZ in both 2014 and 2015, and an increase in 2015 for the PGCHEZ (Appendix B, Figure 4). However, these increases may be related to acute, rather than chronic, conditions based on PQI composite rate trends. The PGCHEZ and GLP HEZ had readmission rates lower than Maryland overall in 2014 and the GLP HEZ had rates lower than the State in 2015.

In general, the all-cause ED visit rates decreased slightly for Maryland and the ACHP and GLP HEZs from 2009 to 2015 (Appendix B, Figure 5). All cause ED visit rates among Black-African Americans increased slightly from 2009 to 2012, and then declined from 2012 to 2015 for Maryland and three HEZs. From 2009 to 2015, ED visit rates among Whites decreased for

Maryland and three HEZs. Rates increased for the CCC and WBPCAC HEZs (Appendix B, Figure 7). ED visit rates among Black-African Americans were higher than rates among Whites for Maryland and all five HEZs.

Outcome measures have been mapped by HEZ, and are available at the following link: https://maps.dhmh.maryland.gov/hez/. This map also includes the zip code level indicators of economic disadvantage and poor health for HEZ applicants.

C. Preliminary Findings from the HEZ External Evaluation

As part of the HEZ external evaluation, the evaluation team at the Johns Hopkins Bloomberg School of Public Health's Center for Health Disparities Solutions (CHDS) conducted an analysis of hospital utilization metrics. They divided Maryland zip codes into three categories: zip codes with an HEZ (HEZ zip codes), zip codes that are eligible for an HEZ but do not have one (HEZ-eligible zip codes), and zip codes that are not eligible for an HEZ (non-HEZ zip codes). More information regarding the HEZ eligibility criteria and data by zip code can be found at the following link: http://dhmh.maryland.gov/healthenterprisezones/Pages/elligibility.aspx.

CHDS obtained hospital utilization data from HSCRC and CRISP. They computed for each zip code in the State the following variables:

- Number of discharges per 1000 residents
- Number of discharges with a primary diagnosis for an HEZ-related condition per 1000 residents
- Number of discharges with a primary diagnosis for the preventable conditions per 1000 residents
- Number of hospital readmissions per 1000 residents
- Number of ED visits per 1000 residents
- Number of ED visits with a primary diagnosis for an HEZ-related condition per 1000 residents
- Number of ED visits with a primary diagnosis for a potentially preventable condition per 1000 residents

CHDS defined HEZ-related conditions as diabetes (ICD9: 250); hypertension (ICD9: 401); congestive heart failure (CHF) (ICD9: 428.0); COPD) which includes: chronic bronchitis (ICD9: 490-491), emphysema (ICD9: 492), bronchiectasis (ICD9: 494) and chronic airway obstruction (ICD9: 496); asthma (ICD9: 493); and mental health problems (ICD9: 290-319). They used the AHRQ PQIs to define preventable conditions. Their analysis spanned the years 2010 to 2015 with the exception of the readmission rates, which were computed for 2012 to 2014.

The results of the utilization analysis show that the HEZ zip codes have, on average, higher rates of inpatient and ED utilization across all seven measures compared to the HEZ-eligible zip codes. Given the socio-demographic characteristics of the HEZ zip codes compared to the HEZ-eligible zip codes, it appears the State has chosen the zip codes with the highest need.

Overall there was a downward trend in inpatient hospital utilization from 2010 to 2015 in HEZ and HEZ-eligible zip codes across all three groups. However, the decline in inpatient utilization was greater for HEZ zip codes. The decline in total discharges per capita from 2010 to 2015 was 30.7% in HEZ zip codes compared to 23.9% in HEZ-eligible zip codes. The decline in discharges per capita for HEZ-related conditions was 32.9% in HEZ zip codes and 29.7% in HEZ-eligible zip codes. The decline in preventable discharges was 31.8% in HEZ zip codes compared to 23.9% in HEZ-eligible zip codes. The decline in readmission per capita from 2010 to 2014 was 22.1% for HEZ zip codes compared to 14.0% in HEZ-eligible zip codes.

Overall there was an upward trend in ED visits per capita from 2010 to 2015. This was fairly consistent across all three groups. However, the increase in ED visits was greater for HEZ zip codes in two of the three outpatient indicators. The increase in total ED visits per capita was 21.2% in HEZ zip codes compared to 15.6% in HEZ-eligible zip codes. The increase in ED visits for HEZ-related conditions was 18.1% in HEZ zip codes compared to 11.8% in HEZ-eligible zip codes. Similarly, the increase in potentially preventable ED visits was 20.9% in HEZ zip codes compared to 16.8% in HEZ-eligible zip codes.

For more information regarding the evaluation findings to date, please see the following link: http://dhmh.maryland.gov/healthenterprisezones/Documents/Findings%20HEZ%20External%20Evaluation,%20Darrell%20Gaskin,%20PhD.pdf.

V. Program Guidance and Accomplishments

A. Technical Assistance Available to All HEZs

The State HEZ Team, supported by an HEZ Health Policy Advisor, focuses on assessing TA needs among the HEZs, and directing expertise and resources to meet those needs. TA is provided to the HEZs through phone calls, site visits, conferences, and All-Zone meetings with the HEZs, State HEZ Team, and other experts and stakeholders.

Site Visits

Data assessment site visits were conducted by the State HEZ Data Team with each HEZ in late 2013 and site visits were conducted in the spring of 2014, and in winter and spring of 2015. In 2016, site visits were replaced by sustainability planning meetings.

All-Zone Meetings

The State HEZ Team hosted its first All-Zone Meeting on December 3, 2014. These All-Zone Meetings continued at least semi-annually and serve as a primary method for providing TA to the HEZs.

The fourth All-Zone Meeting was held on April 14, 2016 and focused on sustaining the HEZs' efforts. Presentations and activities included:

- "History of the Future" exercise where HEZs identified factors, interventions, and strategies that facilitated success in their HEZ and those that acted as barriers to success
- State Efforts to Address the Broader Determinants of Health and Possible Opportunities for Alignment with the HEZ Model, with presentations by:
    - Carroll Hospital
    - Medicaid
    - DHMH's Office of Population Health Improvement
    - HSCRC
- "Force Field Analysis" exercise where HEZs defined driving and restraining forces relevant to HEZ-specific sustainability goals and identified specific action steps to take now to address the driving and restraining forces

HEZ Sustainability Summit

In fall 2016, DHMH, with support from RWJF, hosted an HEZ Sustainability Summit and a Pre-Summit Planning meeting. The Pre-Summit Planning Meeting occurred in October and included updates and discussions on the following:

- The proposed Maryland Primary Care Strategy
- The Maryland Population Health Plan
- Hospital partnerships and community benefit dollars
- Medicaid efforts to address social determinants of health
- HSCRC's Regional Partnerships and other efforts to address public health and prevention

On November 3, 2016, DHMH hosted the Maryland Health Enterprise Zones Summit: Sustaining Social Determinants of Health Programs (the Summit) at AAMC in the ACHP HEZ with approximately 135 local, State, and national stakeholders. The objectives of the Summit were to secure broad community and stakeholder support for sustaining the HEZ Initiative; to disseminate the HEZs' successes and lessons learned; and to identify sustainability priorities, strategies, and opportunities at the State and local levels for programs like the HEZs, that address social determinants of health. The Summit featured presentations by the HEZ evaluation team; HEZ and DHMH leadership; leadership from HEZ partner hospitals; Dr. David Krol from RWJF; health care system leaders in Maryland; and experts from other states who have experience implementing and sustaining similar programs and/or conducting public health sustainability research. Finally, the organization that has been contracted to implement the RWJF-supported sustainability planning process presented the next steps in that process, which will occur between November 2016 and June 2017.

Stephen Thomas, PhD, MS, Professor, Health Services Administration, University of Maryland, School of Public Health and Director, Maryland Center for Health Equity, served as Master of Ceremonies for the day. Secretary Van Mitchell (former), DHMH, and E. Albert Reece, MD, PhD, MBA, Vice President for Medical Affairs and Dean, University of Maryland School of Medicine provided welcoming remarks.

Summit proceedings, including agenda, presentations, full meeting transcript, list of attendees, speaker bios, and photos are available on the HEZ web site: http://dhmh.maryland.gov/healthenterprisezones/Pages/Updates.aspx.

B. Cultural Competency Standards

In 2013, OMHHD used assessment criteria recommended by the Cultural and Linguistic Competency Workgroup of the Maryland Health Disparities Collaborative to develop a cultural and linguistic competency assessment tool for organizations requesting tax incentives as part of the HEZ program. The HEZ tax incentive program has submission and reporting requirements for organizations including an assessment of cultural competency. The tool, OMHHD's Cultural Competency Assessment Survey, is available online to the HEZs.

In 2014, OMHHD held cultural competency training sessions at all HEZs, which included meetings with HEZ leadership as well as full training sessions for on-site staff (see the 2014 HEZ Annual Report: http://dhmh.maryland.gov/healthenterprisezones/Pages/publications.aspx).

OMHHD developed additional cultural competency reporting requirements for health care providers seeking loan repayment assistance or tax incentives through the HEZ Initiative. Each provider is required to complete six continuing medical education credits (CMEs) in cultural competency and to send proof of completion to DHMH. Tax credit applicants must complete cultural competency requirements before receiving final tax credit certification. MLARP recipients are required to complete six CMEs in cultural competency per each year of loan repayment service (a minimum of two years). OMHHD has provided a list of applicable online cultural competency training courses for providers, but any course in cultural competency that provides an adequate number of CMEs is acceptable.

C. Monitoring Performance and Assessing Impact

The five HEZs have been monitored through site visits, quarterly reports that include process and outcome metrics, and semi-annual program narratives describing HEZ progress, challenges, and strategies for success. A formal review of each quarterly report submission is provided to each HEZ through a report follow-up memo or email. Subsequent phone conference or email exchanges are used to resolve any outstanding reporting questions or concerns.

An HEZ Data Team was established in July 2014 to support the HEZs in their data collection and reporting efforts. This group reviews and provides feedback and guidance to the HEZs regarding data collection, reporting and storage, appropriate metrics, data reports, and data analysis. An "End of Year 1" audit and site visits to all HEZs were conducted during spring and summer 2014, and produced significant revisions to the HEZs' reporting templates and metrics to capture more relevant, accurate, and complete data. These efforts have resulted in changes in the data reported by several HEZs over the course of the HEZ Initiative, and are reflected in the data in this report. The summer 2016 site visits were replaced by meetings to plan and initiate the formal, RWJF-supported sustainability planning process.

The Act requires DHMH and CHRC to submit an annual report to the Governor and Maryland General Assembly that includes: (1) number and types of incentives utilized in each HEZ; (2) evidence of the impact of tax and loan repayment incentives in attracting practitioners to the HEZs; (3) evidence of the impact of incentives offered in HEZs in reducing health disparities and improving health outcomes; and (4) evidence of progress in reducing health care costs and hospital admissions and readmissions in HEZs. These metrics are collected through the HEZs' quarterly reports to the State and through HSCRC and CRISP.

The independent evaluation of the HEZ Initiative, conducted by the HDSCS evaluation team, was initiated in Year 3. The evaluation includes an assessment of the overall impact of the HEZ Initiative in terms of its three policy goals: (1) reducing health disparities among racial and ethnic groups and between geographic areas; (2) improving health care access and health outcomes in underserved communities; and (3) reducing health care costs and hospital admissions and readmissions by providing a variety of incentives. The evaluation also includes an assessment of the performance of the HEZs towards their individual programmatic goals and targeted health outcomes of each HEZ program, and resident and health provider experience and participation in the HEZs. Finally, an economic impact assessment of the five HEZs will be conducted as part of the evaluation using the following criteria: (1) cost savings achieved by the HEZs in terms of reduced hospital expenditures; (2) number and type of incentives used by the HEZs and their impact on hiring and service expansion; (3) number of direct and indirect jobs added by the HEZs; and (4) additional economic activity generated by the HEZs. Highlights of their findings to date can be found in section IV of this report.

D. HEZ Posters, Presentations, Publications, and Awards

2016 Presentations and Posters

- University of Maryland School of Medicine Department of Epidemiology and Public Health Grand Rounds. ***Maryland's Approach to Reducing Preventable Utilization: Health Enterprise Zone Model, CMS Waiver, and Hospital Global Budgets***. (May 5, 2016)

- DHMH Center for Chronic Disease Prevention and Control 2016 Chronic Disease Conference. ***Building Success of Evidence-Based Community Programs, Improving Chronic Disease Outcomes in Maryland.*** (September 7, 2016)

- Department of Health and Human Services Office of Minority Health State Partnership Initiative Call. ***Maryland's Health Enterprise Zones Model***. (October 19, 2016)

- OMHHD 2016 Annual Conference. ***Achieving Health Equity Through Community Engagement and Innovative Health Care Delivery***. (December 13, 2016)

- AcademyHealth 9th Annual Conference on the Science of Dissemination and Implementation. ***The Maryland Health Enterprise Zones Initiative: Addressing***

Common Health Problems with Creative Community Based Solutions. (December 15, 2016)

2016 Awards

Association of State and Territorial Health Officials Vision Award
The Maryland HEZ Initiative received the 2016 First Place Vision Award for Innovation, Effectiveness, and Replicability from the Association of State and Territorial Health Officials (ASTHO) for programs with a budget of $250,000 or more. The ASTHO Vision Awards recognize outstanding state and territorial health agency programs and initiatives that use a creative approach to address public health needs or problems. The HEZ Initiative was awarded the ASTHO Vision Award for its innovative design, approach, and timing, and for demonstrating that it is effective in addressing several of Maryland's priority outcomes.

Maryland Department of Health and Mental Hygiene Health Equity Awards
Maryland's five HEZs were awarded the 2016 DHMH Health Equity Award. The DHMH Health Equity Award: Advancing Social Justice through Health Equity, recognizes programs and organizations that have successfully implemented efforts to promote justice by addressing health equity and social determinants of health in Maryland's most disadvantaged communities. This award considers cost, effectiveness, resilience, and impact on the State's public health.

The HEZs received this award because they have created communities in which integrated health care systems, led by community coalitions, are pioneering health care and prevention efforts in a patient and family-centered manner and with a health equity approach. These systems work in tandem with a variety of stakeholders to improve health and decrease costs, expand access, empower communities, and reduce health disparities. The HEZ model aligns systems and incentives to broaden the scope of care in Maryland's most underserved communities to address social determinants of health.

VI. Sustainability Planning

Throughout the remainder of Year 4 of the Initiative, the HEZs will submit quarterly and final reports. The State HEZ Team, in partnership with the HEZs, will ensure ongoing oversight that focuses on achievement of the stated objectives for each HEZ and the HEZ Initiative overall. The State HEZ Team will continue to work closely with the HEZs and the evaluation teams to finalize program impact metrics within each HEZ and across HEZs where interventions are similar. A meeting of each HEZs' local evaluation teams, the external evaluation team from Johns Hopkins School of Public Health, HEZ leadership, and the State HEZ Team was held on February 7, 2017 to review and prepare for all final evaluation and reporting requirements. An HEZ sustainability plan will be developed by a contractor by the end of June 2017. The scope of work will include working with the HEZs to conduct a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis; summarizing community support for HEZ sustainability; developing criteria for determining program value-added; and developing sustainability planning goals. The plan will identify sustainability approaches and strategies including policy, systems, and environmental change strategies; coalition and partnership approaches; communication strategies; social marketing strategies; integrating programs and

services into local infrastructures; and identifying diverse financial opportunities. The plan will also develop action plans by strategy and include a summary of program successes, lessons learned, and specific recommendations for implementation in other communities and populations.

The HEZs are also working with a contractor to develop HEZ-specific videos to assist them in their sustainability efforts. These videos will target broad audiences, to potentially include funders, patients, partners, and stakeholders.

The intended results of the sustainability planning activities and HEZ sustainability plan are for the HEZs to have identified a number of viable paths towards sustainability, including action plans for each path, and the insight and tools needed to effectively make their case to potential funders and partners regarding sustainability. Effective leveraging of partnerships and resources to continue HEZ programs, services, and/or activities would indicate plan success.

Finally, the State HEZ Team will be working with the HEZs to disseminate findings from the HEZ experience. The dissemination plan will include identification of target audiences, key messages linked to insights and results gained through the evaluation and sustainability planning process, and priority dissemination activities. Dissemination activities will likely include information-sharing at community meetings, presentations and posters at public health conferences and meetings, and the publication of reports and peer-reviewed journal articles, among others.

Appendix A
HEZ Data Tables

For the HEZ-specific data tables below (Tables 1-5), the following definitions apply:

'Jobs Added' includes new or retained positions within a HEZ.

'HEZ Practitioners' includes licensed independent practitioners (physician, dentist, nurse practitioner, physician assistant, nurse midwife) and other licensed or certified health care practitioners (registered nurse, social worker, certified medical assistant, licensed practical nurse, dental hygienist, certified addictions counselor) who provide primary care, dental, or behavioral health services in the HEZ. These practitioners are hired or retained to provide services in the HEZ due to the HEZ Initiative and may or may not receive HEZ funding.

AHRQ's PQI chronic composite includes hospitalizations, ages 18 and older, for one of the following conditions: diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, COPD, asthma, hypertension, heart failure, or angina without a cardiac procedure.

Table 1.

Metrics for ACHP										
			April - June 2015	July - September 2015	October- December 2015	January- March 2016		April - June 2016	July - Sept 2016	
Goal: Increase or Maintain Service Capacity	**As of Year 1 Quarter 4**	**As of Year 2 Quarter 4**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**		**Year 4 Quarter 1**	**Year 4 Quarter 2**	
Number of Jobs (in FTEs) Added										
Number of Licensed Independent Practitioners added	1	1	1	1	1	1		1	1	
Number of Other Licensed or Certified Health Care Practioners added	1	1	1	1	1	1		1	1	
Number of Qualified Employees added (CHWs and interpreters)	0	0	0	0	0	0		0	0	
Number of other support staff added	2	2	2	2	2	2		2	2	
Total	4	4	4	4	4	4		4	4	
Goal: Reach Patients with Services	**Year 1 Totals**	**Year 2 Totals**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**	**Year 3 Totals**	**Year 4 Quarter 1**	**Year 4 Quarter 2**	**Initiative Total to Date**
Number of Patients Served (unduplicated by quarter)										
Morris Blum Clinic, Morris Blum residents	**81**	**159**	61	52	50	46	**209**	55	55	**559**
Morris Blum Clinic, reside outside Morris Blum	**470**	**1,233**	330	323	332	334	**1,319**	309	301	**3,632**
Number of patients with diabetes who received primary care services	**70**	**376**	107	95	97	87	**386**	94	111	**1,037**
Total number of patient visits throughout HEZ	**915**	**2,139**	700	686	687	668	**2,741**	683	611	**7,089**
Total number of unduplicated patients throughout HEZ	**551**	**1,392**	391	375	382	380	**1,528**	364	356	**4,191**
Educational/Wellness/Self-Management Interventions										
Number of participants in care coordination program	**N/A**	**90**	28	47	66	66	**207**	61	68	**426**
Number of blood pressure screening participants	**N/A**	**241**	176	193	87	125	**581**	156	135	**1,113**
Number of participants in diabetes self-management program	**17**	**33**	12	0	0	0	**12**	0	0	**62**
Number of participants in healthy lifestyle activities	**N/A**	**301**	20	17	20	20	**77**	15	17	**410**
Number of participants in community health events	**137**	**640**	52	18	101	84	**255**	74	0	**1,106**
Number of participants in smoking cessation workshops	**N/A**	**78**	27	59	154	39	**279**	57	66	**480**
GOAL: Health Improvement										
Morris Blum Senior Housing Resident Outcomes										
Number of 911 calls from Morris Blum residents	**105**	**165**	28	35	20	42	**125**	35	51	**481**
Number of ED visits among Morris Blum residents	**96**	**159**	27	35	41	48	**151**	38	57	**501**
Number of admissions among Morris Blum residents	**N/A**	**N/A**	14	13	9	18	**54**	17	17	**88**
Number of readmissions among Morris Blum residents	**N/A**	**N/A**	<10	<10	<10	<10	**<10**	<10	<10	**12**
Cells are suppressed for counts among MB residents of <10										
	CY 2012		**CY 2013**		**CY 2014**		**CY 2015**			
HEZ Level Outcomes	**Annapolis HEZ**	**Maryland**	**Annapolis HEZ**	**Maryland**	**Annapolis HEZ**	**Maryland**	**Annapolis HEZ**	**Maryland**		
PQI, Chronic Composite per 100,000 population	1070.5	775.7	895.1	766.1	774.0	736	731.9	724.9		
ED visit rates per 1,000 population	405.3	363.6	388	349.1	382.9	348.8	367.9	346.9		
Readmission rates per 1,000 population	17.1	14.2	12.6	11.7	11.0	10.8	10.6	10.3		

Table 2.

Metrics for CCC HEZ										
			April - June 2015	July - September 2015	October-December 2015	January- March 2016		April - June 2016	July - Sept 2016	
Goal: Increase or Maintain Service Capacity	**As of Year 1 Quarter 4**	**As of Year 2 Quarter 4**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**		**Year 4 Quarter 1**	**Year 4 Quarter 2**	
Number of Jobs (in FTEs) Added										
Number of Licensed Independent Practitioners added	3.6	4.3	4.3	4.3	4.5	4.5		4.5	4.3	
Number of Other Licensed or Certified Health Care Practioners added	6.8	6.43	5.63	6.8	7.4	7.4		8.75	8.55	
Number of Qualified Employees (CHWs and interpreters) added	2.95	3.45	3.45	3.45	3.25	3.25		3.75	2.85	
Number of other support staff added	11.07	8.79	10.93	11.43	12.83	12.83		13.13	14.43	
Total	24.42	22.97	24.31	25.98	27.98	27.98		30.13	30.13	
Goal: Reach Patients with Services	**Year 1 Totals**	**Year 2 Totals**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**	**Year 3 Totals**	**Year 4 Quarter 1**	**Year 4 Quarter 2**	**Initiative Total to Date**
Number of Patients Served (unduplicated by quarter)										
Dorchester County School Based Wellness (somatic health)	**133**	**338**	87	48	58	74	**267**	116	86	**940**
Dorchester County School Based Wellness (mental health)	**N/A**	**44**	15	5	9	7	**36**	6	1	**87**
Caroline County School Based Wellness (mental health)	**3**	**101**	37	43	44	27	**151**	86	93	**434**
Mobile Crisis Team	**82**	**197**	65	60	57	63	**245**	66	46	**636**
Median response time to calls for Mobile Crisis Team	**13 min avg**	**16.25 min avg**	19 minutes	25 minutes	25 minutes	17 minutes	**21.5 min avg**	33 minutes	19 minutes	**19 min avg**
Federalsburg Mental Health Clinic					58	121	**179**	122	129	**430**
Total number of patient visits throughout HEZ	**2,687**	**7,899**	2,846	2,483	2,134	1,777	**9,240**	1,903	1,644	**23,373**
Total number of unduplicated patients throughout HEZ	**591**	**1,253**	373	307	362	508	**1,550**	855	873	**5,122**
Number of individuals who receive education from CHOWs	**45**	**773**	129	212	197	134	**672**	346	291	**2,127**
Number of individuals who were screened by CHOWs	**N/A**	**354**	72	91	87	121	**371**	217	190	**1,132**
Educational/Wellness/Self-Management Interventions										
Number of participants in care coordination program	**18**	**59**	1	0 [5]	6	42	**49**	118	165	**409**
Number of participants in Maryland Healthy Weighs	**23**	**156**	50	46	56	52	**204**	104	47	**534**
Number of participants in Dri-Dock Peer Recovery	**19**	**88**	8	8	6	27	**49**	46	56	**258**
Number of participants in Chesapeake Voyagers Peer Recovery	**N/A**	**63**	12	0	0	6	**18**	42	83	**206**
GOAL: Health Improvement										
HEZ Participant Outcomes										
Maryland Healthy Weighs HEZ Participants (n=30)	**Baseline**	**6-month Follow Up**	**% Change**							
Average weight	284	236.8	-16.60%							
Average BMI	46.3	38.6	-16.70%							
Hypertensive MD Healthy Weighs Participants (n=12)	**Baseline**	**6-month Follow Up**	**% Change**							
Average weight	296.8	249.2	-16%							
Average BMI	45.3	38.3	-15.50%							
67% of these patients had a reduction or elimination of hypertension medications.										
Diabetic MD Healthy Weighs Participants (n=5)	**Baseline**	**6-month Follow Up**	**% Change**							
Average weight	334.8	282.3	-15.50%							
Average BMI	50	42.2	-15.70%							
HgA1c	7.7	6.2	-19.30%							
100% of these patients had a reduction or elimination of diabetic medications.										
	CY 2012		**CY 2013**		**CY 2014**		**CY 2015**			
HEZ Level Outcomes	**C/D HEZ**	**Maryland**	**C/D HEZ**	**Maryland**	**C/D HEZ**	**Maryland**	**C/D HEZ**	**Maryland**		
PQI, Chronic Composite per 100,000 population	1753.6	775.7	1425.8	766.1	1,383.4	736	1,564.1	724.9		
ED visit rates per 1,000 population	654.6	363.6	648	349.1	647.6	348.8	668.0	346.9		
Readmission rates per 1,000 population	16.5	14.2	13.2	11.7	13.9	10.8	14.4	10.3		

Table 3.

Metrics for GLP HEZ										
			April - June 2015	July - September 2015	October- December 2015	January- March 2016		April - June 2016	July - Sept 2016	
Goal: Increase or Maintain Service Capacity	**As of Year 1 Quarter 4**	**As of Year 2 Quarter 4**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**		**Year 4 Quarter 1**	**Year 4 Quarter 2**	
Number of Jobs (in FTEs) Added										
Number of Licensed Independent Practitioners added	0.8	2.3	2.5	2.5	2.5	2.5		2.5	2.5	
Number of Other Licensed or Certified Health Care Practioners added	4	3.2	3.2	3.2	3.2	3.2		3.2	3.2	
Number of Qualified Employees Added (CHWs and interpreters)	3	3	3	3	3	3		3	3	
Number of other support staff added	4.7	7.5	7.5	7.5	7.5	7.5		7.5	7.5	
Total	12.5	16	16.2	16.2	16.2	16.2		16.2	16.2	
Goal: Reach Patients with Services	**Year 1 Totals**	**Year 2 Totals**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**	**Year 3 Totals**	**Year 4 Quarter 1**	**Year 4 Quarter 2**	**Initiative Total to Date**
Number of Patients Served (unduplicated by quarter)										
Get Connected to Health Mobile Clinic[1]	**355**	**575**	126	250	109	0	**485**	0	0	**1,415**
Walden Sierra Behavioral Health	**606**	**848**	182	144	153	165	**644**	110	127	**2,335**
MSMH primary care practice	**Opened Sept 2014**	**259**	17	61	183	154	**415**	175	132	**981**
Dental van	**Opened Dec 2014**	**37**	21	3	0	6	**30**	7	3	**77**
Total number of patient visits throughout HEZ	**N/A**	**10,641**	2,305	2,237	1,722	1,839	**8,103**	1,524	1,871	**22,139**
Total number of unduplicated patients throughout HEZ	**N/A**	**1,719**	346	458	445	325	**1,574**	292	262	**3,847**
Number of CHW encounters	**570**	**3,768**	712	706	1,310	1,693	**4,421**	1,557	1,043	**11,359**
Educational/Wellness/Self-Management Interventions										
Number of patients working with care coordinators	**119**	**441**	64	72	106	122	**364**	197	343	**1,464**
Number of rides on HEZ Mobile Medical Route[2]	**387**	**5,470**	1,304	1,836	2,664	1,693	**7,497**	500	1,510	**15,364**
Number of medical specialty rides				57	249	134	440	119	179	**738**
GOAL: Health Improvement										
MSMH Patient Outcomes	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**					
ED visits among HEZ residents	17,422	17,063	16,131	16,027	15,987					
Total ED visits	57,394	56,806	53,084	52,005	52,429					
% of ED patients who reside in HEZ	30.36%	30.04%	30.39%	30.82%	30.49%					
	Jan-16	**Feb-16**	**Mar-16**	**Apr-16**	**May-16**	**Jun-16**	**Jul-16**			
HSCRC unadjusted inpatient radmission rates,[3] MSMH	11.60%	7.40%	8.80%	6.80%	8.10%	10.70%	9.50%			
HSCRC Unadjusted inpatient Radmission Rates, MSMH	12.10%	8.60%	9.50%	9.10%	8.60%	11.10%	12.10%			
	CY 2012		**CY 2013**		**CY 2014**		**CY 2015**			
HEZ Level Outcomes	**GLP HEZ**	**Maryland**	**GLP HEZ**	**Maryland**	**GLP HEZ**	**Maryland**	**GLP HEZ**	**Maryland**		
PQI, Chronic Composite per 100,000 population	893.2	775.7	674.7	766.1	697.1	736	635.9	724.9		
ED visit rates per 1,000 population	505.1	363.6	469.9	349.1	471.9	348.8	464	346.9		
Readmission rates per 1,000 population	13.4	14.2	10.2	11.7	7.2	10.8	6.8	10.3		

[1]Get Connected to Health mobile clinic practitioner resigned as of Y3Q4; a Physician Assistant has been hired and will begin providing services in Y4Q3.
[2]A motor vehicle accident limited the shuttle service starting in Y3Q4.
[3]HSCRC RY 17 Readmissions logic - http://hscrc.maryland.gov/init-readm-rip.cfm.

Table 4.

Metrics for PGCHEZ										
			April - June 2015	July - September 2015	October-December 2015	January- March 2016		April - June 2016	July - Sept 2016	
Goal: Increase or Maintain Service Capacity	**As of Year 1 Quarter 4**	**As of Year 2 Quarter 4**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**		**Year 4 Quarter 1**	**Year 4 Quarter 2**	
Number of Jobs (in FTEs) Added										
Number of Licensed Independent Practitioners added	2.6	3.5	3.5	3.2	4.3	4.3		4.3	3.9	
Number of Other Licensed or Certified Health Care Practioners added	1.5	6.5	6.5	6.5	2.95	2.95		2.95	3.85	
Number of Qualified Employees added (CHWs and interpreters)	3	5	5	4	4	4		4	5	
Number of other support staff added	1.5	2.5	2.5	2.5	5.75	5.75		5.75	5.55	
Total	8.6	17.5	17.5	16.2	17	17		17	18.3	
Goal: Reach Patients with Services	**Year 1 Totals**	**Year 2 Totals**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**	**Year 3 Totals**	**Year 4 Quarter 1**	**Year 4 Quarter 2**	**Initiative Total to Date**
Number of Patients Served (unduplicated by quarter)										
Global Vision	**11**	**271**	82	75	86	126	**369**	100	105	**856**
Greater Baden Medical Services	**910**	**13,204**	3,518	2,863	3,403	2,550	**12,334**	3,465	3,241	**33,154**
Gerald Family Care	**Opened Nov 2014**	**664**	541	570	588	655	**2,354**	655	672	**4,345**
Family and Medical Counseling[1]									107	**107**
Total number of patient visits throughout HEZ	**11,526**	**19,814**	5,499	4,486	5,088	4,733	**19,806**	6,517	6,085	**63,748**
Total number of unduplicated patients throughout HEZ	**925**	**14,123**	4,141	3,508	4,077	3,331	**15,057**	4,220	4,018	**38,343**
Educational/Wellness/Self-Management Interventions										
Number of clients in CHW care coordination program	**N/A**	**376**	65	63	87	91	**306**	98	116	**896**
Number of patient encounters with care coordinators	**N/A**	**5,967**	1,362	1,099	1,357	1,118	**4,936**	1,359	2,325	**14,587**
Number of Wellness Plans created for Global Vision patients	**N/A**	**153**	176	75	86	248	**585**	100	219	**1,057**
Number of Wellness Plans created for Greater Baden patients	**N/A**	**214**	121	118	125	88	**452**	144	114	**924**
Number of Wellness Plans created for Gerald Family Care patients	**N/A**	**48**	0	30	58	40	**128**	25	50	**251**
Total number of completed client resource connections	**N/A**	**2,050**	1,522	1,518	1,547	1,120	**5,707**	1,409	2,408	**11,574**
GOAL: Health Improvement										
HEZ Participant Outcomes										
	6 mos before Care Coordination		**6 mos after Care Coordination**							
	Avg Hospital Visits	Avg Hospital Charges	Avg Hospital Visits	Avg Hospital Charges						
Care Coordination Program graduates (n=22)	3.55	$18,929	2.05	$8,699						
Care Coordination Program Non-compliant (n=33)	6.39	$31,662	5.09	$18,142						
Care Coordination Program Ongoing participants (n=41)	6.59	$29,353	5.51	$20,493						
	CY 2012		**CY 2013**		**CY 2014**		**CY 2015**			
HEZ Level Outcomes	**PGCHEZ**	**Maryland**	**PGCHEZ**	**Maryland**	**PGCHEZ**	**Maryland**	**PGCHEZ**	**Maryland**		
PQI, Chronic Composite per 100,000 population	1294.5	775.7	1168.7	766.1	1,099.3	736	1,070.9	724.9		
ED visit rates per 1,000 population	368.9	363.6	351.5	349.1	361.4	348.8	355.5	346.9		
Readmission rates per 1,000 population	13.7	14.2	11.4	11.7	9.4	10.8	10.6	10.3		

[1]Family and Medical Counseling provides services 3 full days per week.

Table 5.

Metrics for WBPCAC										
			April - June 2015	July - September 2015	October-December 2015	January-March 2016		April - June 2016	July - Sept 2016	
Goal: Increase or Maintain Service Capacity	**As ofYear 1 Quarter 4**	**As of Year 2 Quarter 4**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**		**Year 4 Quarter 1**	**Year 4 Quarter 2**	
Number of Jobs (in FTEs) added										
Number of Licensed Independent Practitioners added	9	13	14	0	0	0		0	0	
Number of Other Licensed or Certified Health Care Practioners added	4	3	4	0	0	0		0	0	
Number of Qualified Employees (CHWs and interpreters) added	11.5	11.5	8	5	5	5		5	5	
Number of other support staff added	5.5	5.5	6.3	6.3	4.8	4.8		4.8	4.8	
Total[1]	30	33	32.3	11.3	9.8	9.8		9.8	9.8	
Goal: Reach Patients with Services	**Year 1 Totals**	**Year 2 Totals**	**Year 3 Quarter 1**	**Year 3 Quarter 2**	**Year 3 Quarter 3**	**Year 3 Quarter 4**	**Year 3 Totals**	**Year 4 Quarter 1**	**Year 4 Quarter 2**	**Initiative Total to Date**
Number of Patients Served (unduplicated by quarter)										
UMMC University Care Edmondson Village	4,784	5,235	1,158	1,233	1,091	1,155	4,637	1,069	1,086	16,811
UMMC University Care at Bolton Hill	N/A	305	312	333	304	318	1,267	189	320	2,081
Bon Secours Family Health and Wellness Center	304	1,454	429	394	354	401	1,578	391	378	4,105
Baltimore Medical System at St. Agnes	1,681	3,352	1,003	1,807	1,679	1,818	6,307	1,816	1,819	14,975
St. Agnes Outpatient Clinic	N/A	6,479	3,402	1,807	1,833	1,949	8,991	1,798	1,918	19,186
Total Health Care	15,671	19,438	4,471	4,390	4,186	3,863	16,910	3,855	3,849	59,723
Park West	145	485	268	246	246	266	1,026	291	338	2,285
Total number of patient visits throughout HEZ	33,789	53,101	15,841	25,517	14,843	15,125	71,326	14,550	15,215	187,981
Total number of unduplicated patients throughout HEZ	22,716	33,087	10,040	13,916	9,693	9,770	43,419	9,409	9,708	118,339
Number of individuals who connect with a CHW	2,397	4,559	1,118	800	257	475	2,650	408	354	10,368
Number of newly identified high utilizers	N/A	N/A	N/A	319	347	377	1,043	365	354	1,762
Number of high utilizers successfully linked to a CHW	N/A	N/A	N/A	249	230	213	692	256	232	1,180
Number of high utilizers successfully linked to a CHW for prolonged support	N/A	N/A	N/A	111	149	80	340	72	63	475
Educational/Wellness/Self-Management Interventions										
Number of participants in Stanford Disease Management Program	84	0	124	22	44	21	211	69	66	430
Number of participants in WB CARE Fitness Program	407	980	265	277	397	590	1,529	658	577	4,151
Number of residents enrolled in Passport to Health program	468	2,071	997	1,200	N/A	150	2,347	658	577	6,121
GOAL: Health Improvement										
	CY 2012		**CY2013**		**CY2014**		**CY2015**			
HEZ Level Outcomes	**W. Baltimore HEZ**	**Maryland**	**W. Baltimore HEZ**	**Maryland**	**W. Baltimore HEZ**	**Maryland**	**W. Baltimore HEZ**	**Maryland**		
PQI, Chronic Composite per 100,000 population	2,351.6	775.7	2,111.3	766.1	1,966.9	736	1,727.6	724.9		
ED visit rates per 1,000 population	948.7	363.6	937.7	349.1	973.7	348.8	958.7	346.9		
Readmission rates per 1,000 population	37.3	14.2	31.1	11.7	26.3	10.8	22.5	10.3		

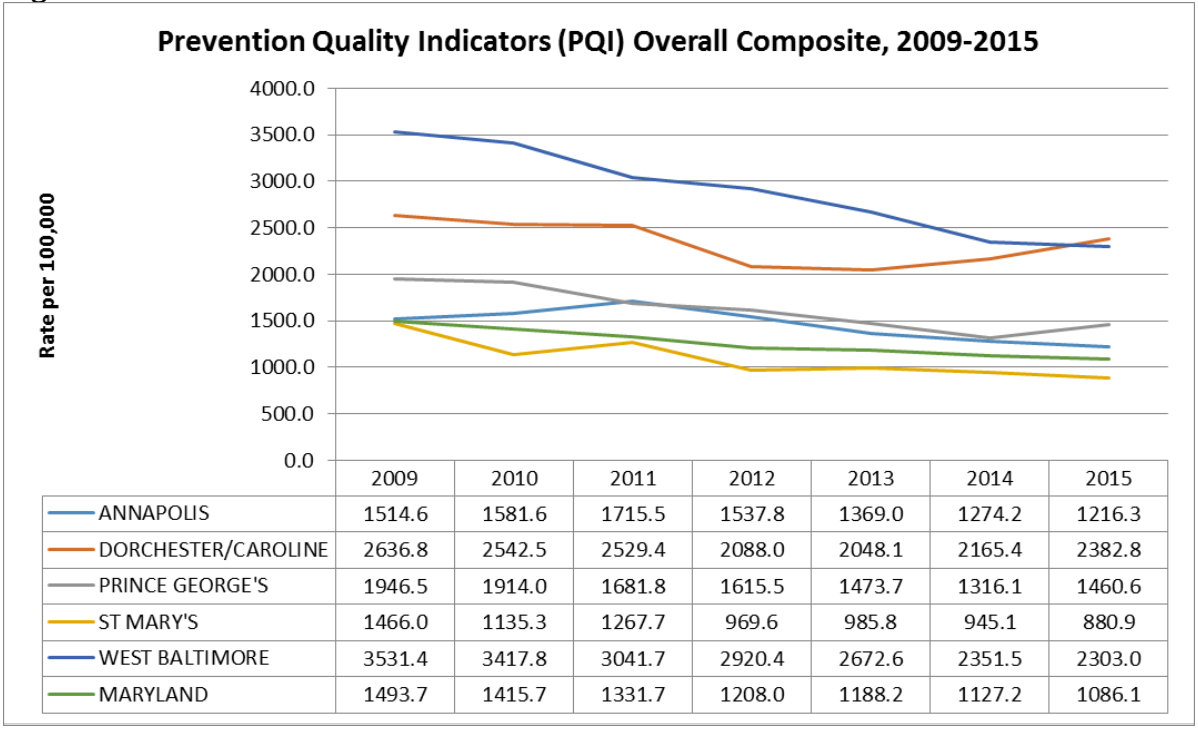
[1] West Baltimore HEZ revised their criteria for reporting "HEZ Jobs Added" as of Y3Q2.

Appendix B
Hospital Utilization Data, Maryland, and by HEZ

Table 1. AHRQ PQI Composite Measures

Overall Composite (PQI #90)	
Acute Composite (PQI #91)	**Chronic Composite (PQI #92)**
PQI #10 Dehydration Admission Rate PQI #11 Bacterial Pneumonia Admission Rate PQI #12 Urinary Tract Infection Admission Rate	PQI #01 Diabetes Short-Term Complications Admission Rate PQI #03 Diabetes Long-Term Complications Admission Rate PQI #05 Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate PQI #07 Hypertension Admission Rate PQI #08 Congestive Heart Failure Admission Rate PQI #13 Angina without Procedure Admission Rate PQI #14 Uncontrolled Diabetes Admission Rate PQI #15 Asthma in Younger Adults Admission Rate PQI #16 Rate of Lower-Extremity Amputation Among Patients with Diabetes

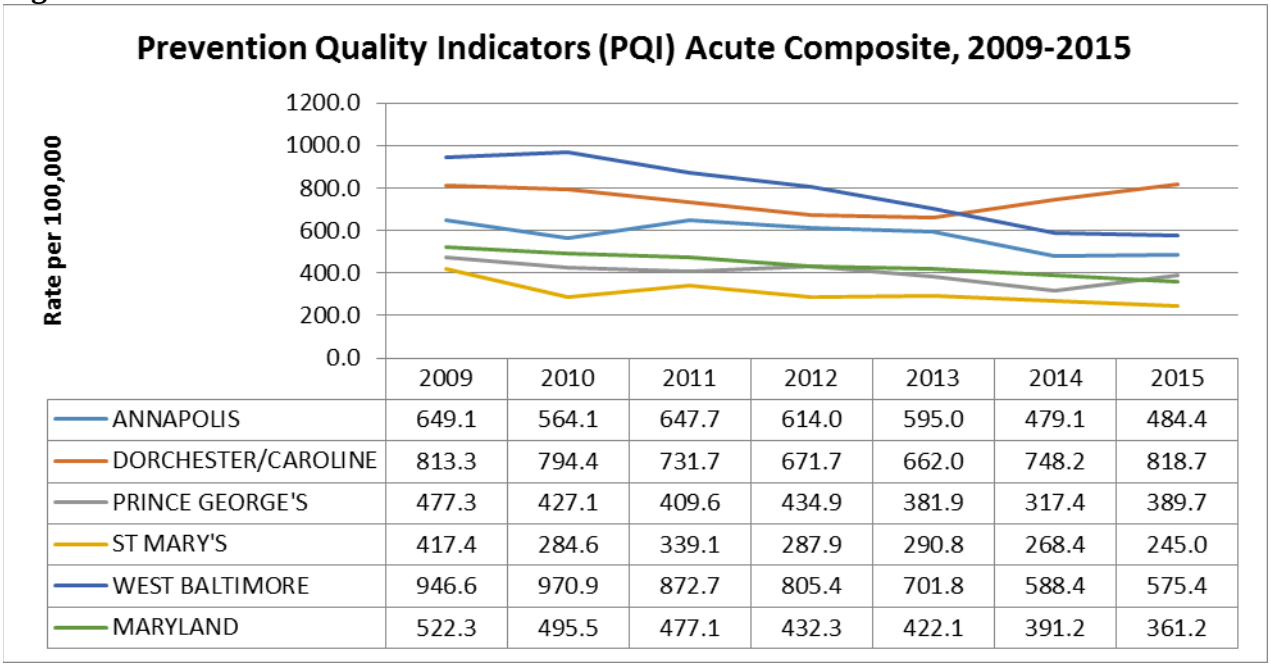
Figure 1.



	2009	2010	2011	2012	2013	2014	2015
ANNAPOLIS	1514.6	1581.6	1715.5	1537.8	1369.0	1274.2	1216.3
DORCHESTER/CAROLINE	2636.8	2542.5	2529.4	2088.0	2048.1	2165.4	2382.8
PRINCE GEORGE'S	1946.5	1914.0	1681.8	1615.5	1473.7	1316.1	1460.6
ST MARY'S	1466.0	1135.3	1267.7	969.6	985.8	945.1	880.9
WEST BALTIMORE	3531.4	3417.8	3041.7	2920.4	2672.6	2351.5	2303.0
MARYLAND	1493.7	1415.7	1331.7	1208.0	1188.2	1127.2	1086.1

Source: HSCRC data prepared by the DHMH VDU.

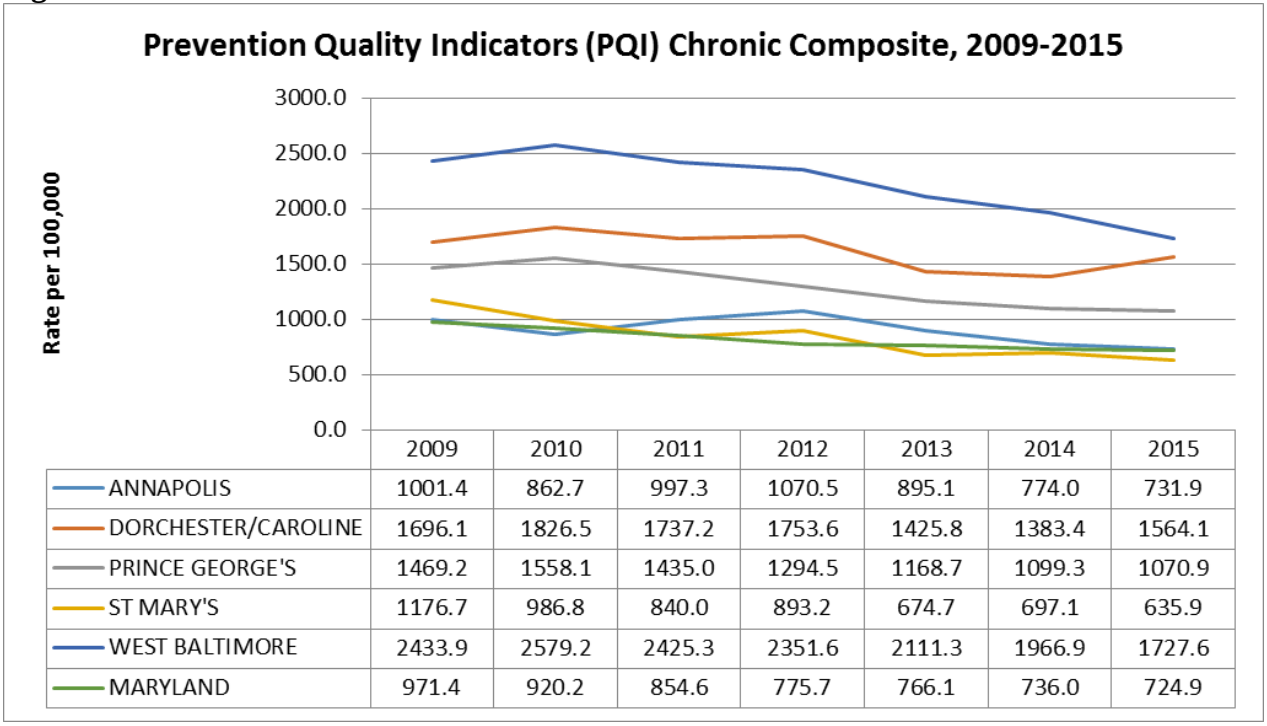
Figure 2.



	2009	2010	2011	2012	2013	2014	2015
ANNAPOLIS	649.1	564.1	647.7	614.0	595.0	479.1	484.4
DORCHESTER/CAROLINE	813.3	794.4	731.7	671.7	662.0	748.2	818.7
PRINCE GEORGE'S	477.3	427.1	409.6	434.9	381.9	317.4	389.7
ST MARY'S	417.4	284.6	339.1	287.9	290.8	268.4	245.0
WEST BALTIMORE	946.6	970.9	872.7	805.4	701.8	588.4	575.4
MARYLAND	522.3	495.5	477.1	432.3	422.1	391.2	361.2

Source: HSCRC data prepared by the DHMH VDU.

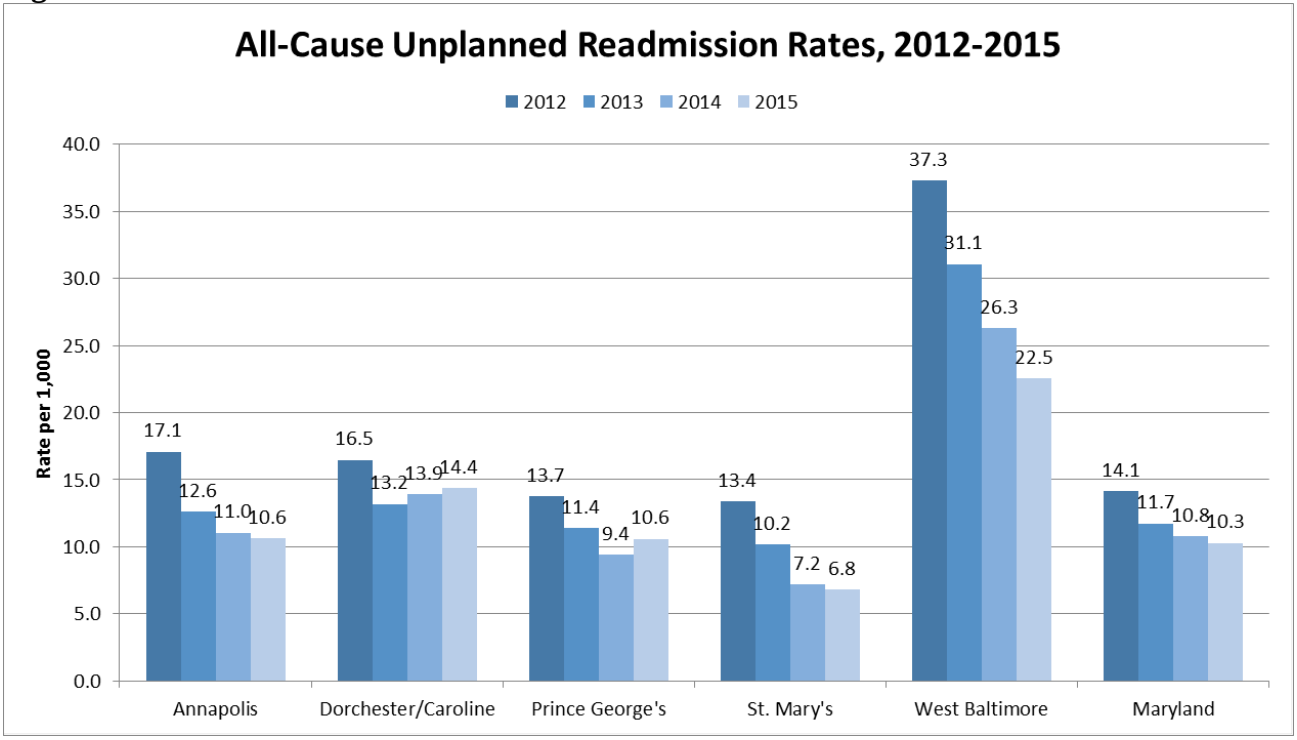
Figure 3.



	2009	2010	2011	2012	2013	2014	2015
ANNAPOLIS	1001.4	862.7	997.3	1070.5	895.1	774.0	731.9
DORCHESTER/CAROLINE	1696.1	1826.5	1737.2	1753.6	1425.8	1383.4	1564.1
PRINCE GEORGE'S	1469.2	1558.1	1435.0	1294.5	1168.7	1099.3	1070.9
ST MARY'S	1176.7	986.8	840.0	893.2	674.7	697.1	635.9
WEST BALTIMORE	2433.9	2579.2	2425.3	2351.6	2111.3	1966.9	1727.6
MARYLAND	971.4	920.2	854.6	775.7	766.1	736.0	724.9

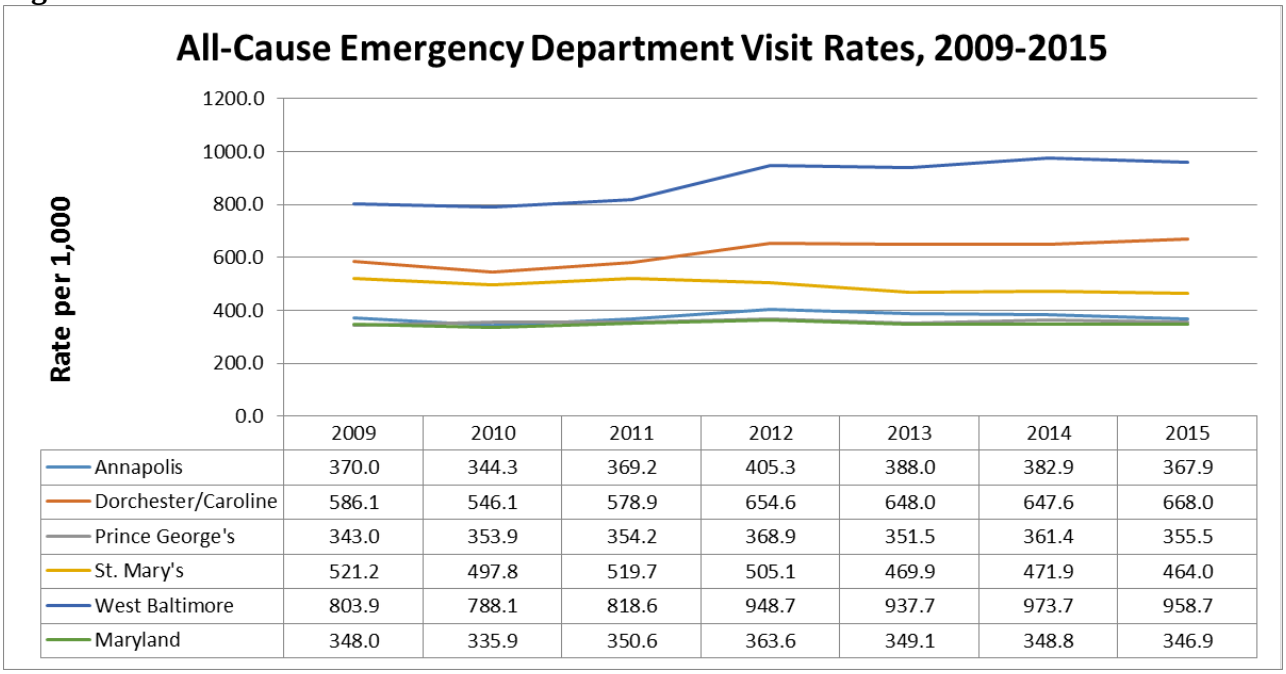
Source: HSCRC data prepared by the DHMH VDU.

Figure 4.



Source: HSCRC data prepared by the CRISP and the DHMH VDU.

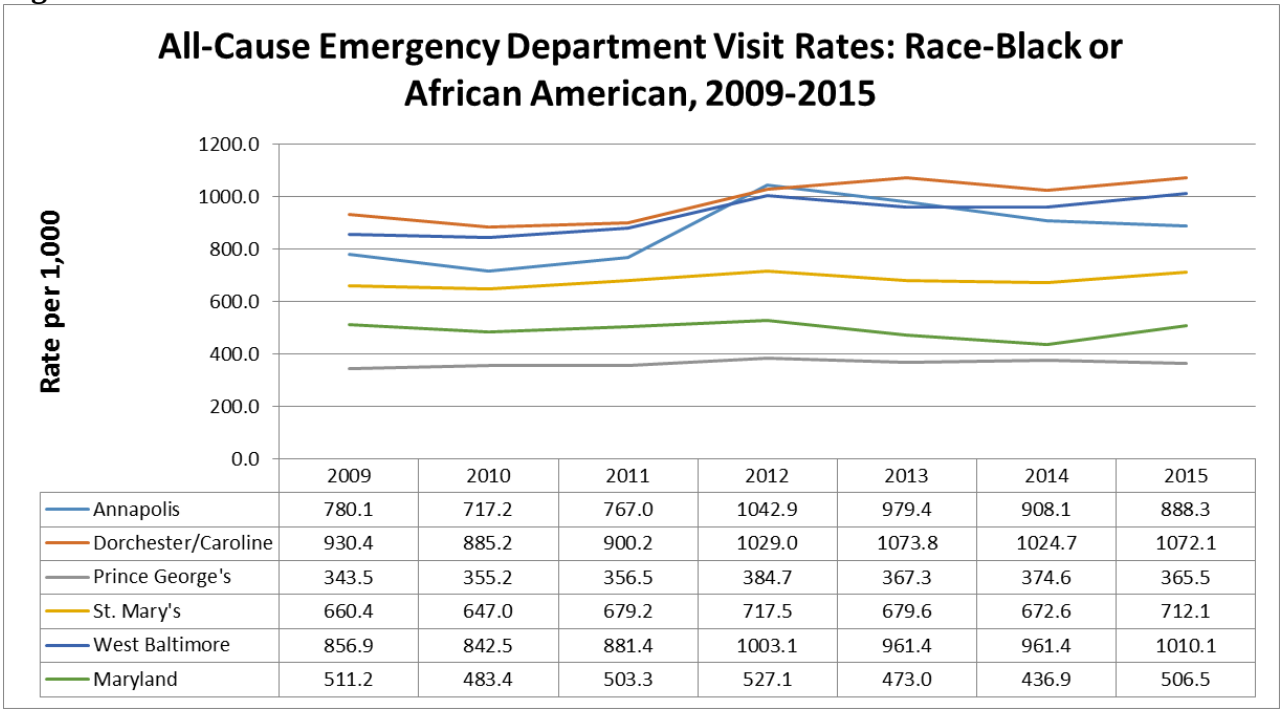
Figure 5.



	2009	2010	2011	2012	2013	2014	2015
Annapolis	370.0	344.3	369.2	405.3	388.0	382.9	367.9
Dorchester/Caroline	586.1	546.1	578.9	654.6	648.0	647.6	668.0
Prince George's	343.0	353.9	354.2	368.9	351.5	361.4	355.5
St. Mary's	521.2	497.8	519.7	505.1	469.9	471.9	464.0
West Baltimore	803.9	788.1	818.6	948.7	937.7	973.7	958.7
Maryland	348.0	335.9	350.6	363.6	349.1	348.8	346.9

Source: HSCRC data prepared by the DHMH VDU.

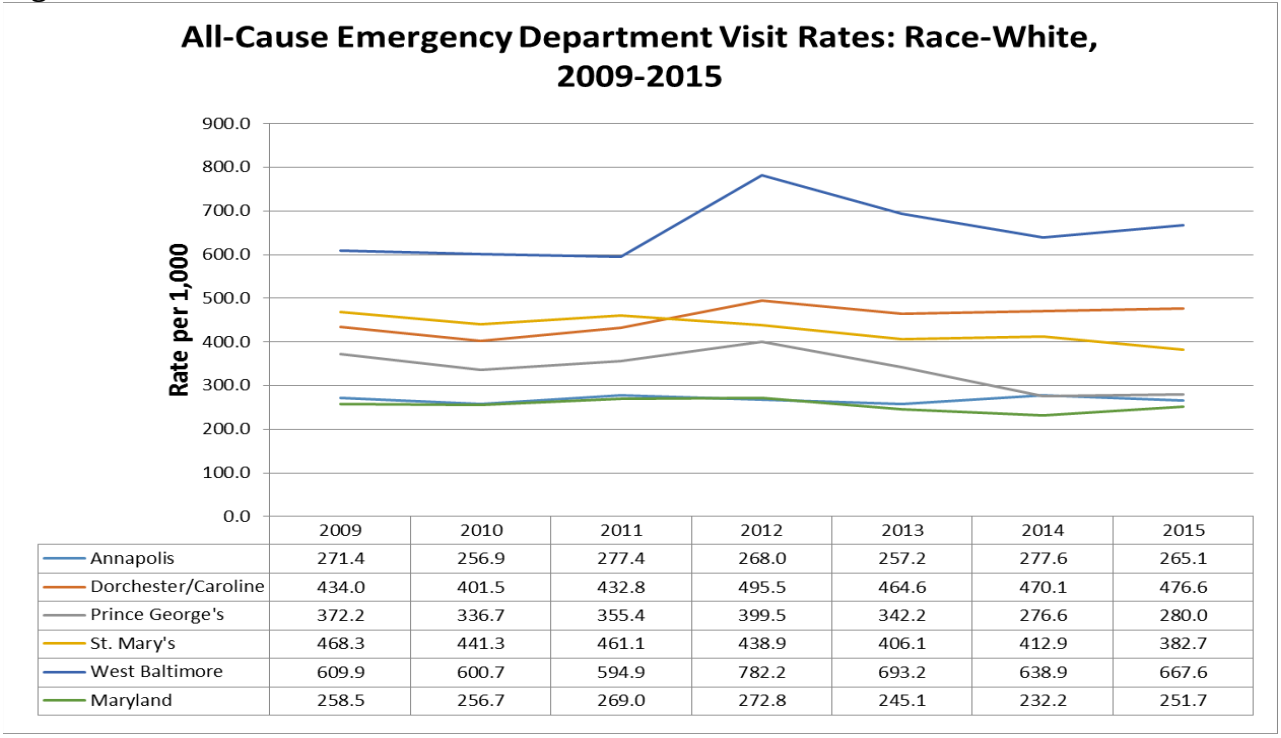
Figure 6.



	2009	2010	2011	2012	2013	2014	2015
Annapolis	780.1	717.2	767.0	1042.9	979.4	908.1	888.3
Dorchester/Caroline	930.4	885.2	900.2	1029.0	1073.8	1024.7	1072.1
Prince George's	343.5	355.2	356.5	384.7	367.3	374.6	365.5
St. Mary's	660.4	647.0	679.2	717.5	679.6	672.6	712.1
West Baltimore	856.9	842.5	881.4	1003.1	961.4	961.4	1010.1
Maryland	511.2	483.4	503.3	527.1	473.0	436.9	506.5

Source: HSCRC data prepared by the DHMH VDU.
Note: HSCRC's race variable changed July 2013; therefore, 2013+ race data should be compared to previous years with caution.

Figure 7.



	2009	2010	2011	2012	2013	2014	2015
Annapolis	271.4	256.9	277.4	268.0	257.2	277.6	265.1
Dorchester/Caroline	434.0	401.5	432.8	495.5	464.6	470.1	476.6
Prince George's	372.2	336.7	355.4	399.5	342.2	276.6	280.0
St. Mary's	468.3	441.3	461.1	438.9	406.1	412.9	382.7
West Baltimore	609.9	600.7	594.9	782.2	693.2	638.9	667.6
Maryland	258.5	256.7	269.0	272.8	245.1	232.2	251.7

Source: HSCRC data prepared by the DHMH VDU. Note: HSCRC's race variable changed July 2013; therefore, 2013+ race data should be compared to previous years with caution.

Appendix C: Acronyms/Key Terms

AAMC	Anne Arundel Medical Center
ACHP	Annapolis Community Health Partnership (Annapolis Health Enterprise Zone)
AHRQ	Agency for Healthcare Research and Quality
BMI	Body Mass Index
CCC	Competent Care Connections (Caroline/Dorchester County Health Enterprise Zone)
CHOW	Community Health Outreach Worker
CHRC	Maryland Community Health Resources Commission
CHDS	Johns Hopkins Bloomberg School of Public Health's Center for Health Disparities Solutions
CHW	Community Health Worker
CME	Continuing Medical Education Credits
COPD	Chronic Obstructive Pulmonary Disease
CRISP	Maryland's Health Information Exchange
DHMH	Maryland Department of Health and Mental Hygiene
ED	Emergency Department
EHR	Electronic Health Record
FPL	Federal Poverty Level
FQHC	Federally Qualified Health Center
FTE	Full Time Equivalent
GLP HEZ	Greater Lexington Park (St. Mary's County Health Enterprise Zone)
HEZ	Health Enterprise Zone
HSCRC	Maryland Health Services Cost Review Commission
MCT	Mobile Crisis Team
MHEC	Maryland Higher Education Commission
MHW	Maryland Healthy Weighs
MLARP	Maryland Loan Assistance Repayment Program
MSMH	MedStar St. Mary's Hospital
NQF	National Quality Forum
NWA	Neighborhood Wellness Advocate
OMHHD	Office of Minority Health and Health Disparities
PAU	Potentially Avoidable Utilization
PCMH	Primary Care Medical Home
PGCHEZ	Prince George's County Health Enterprise Zone
PHIN	Public Health Information Network
PHPA	Prevention and Health Promotion Administration
PQI	Prevention Quality Indicator
RWJF	Robert Wood Johnson Foundation
SBIRT	Screening, Brief Intervention, and Referral to Treatment
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TA	Technical Assistance
VDU	Virtual Data Unit
WBPCAC	West Baltimore Primary Care Access Collaborative (W. Baltimore Health Enterprise Zone)
WIC	Supplemental Nutrition Program for Women, Infants, and Children