GBMC HEALTHCARE

CHRC Pathways to Health Equity Final Evaluation Report

May 1, 2022 - April 30, 2024

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Acronyms

BMI: Body Mass Index
BNIA: Baltimore Neighborhood Indicators Alliance
BP: Blood Pressure
CC: Care Coordination
CM: Care Management
CRISP: Chesapeake Regional Information System for Patients
DM: Disease Management
ED: Emergency Department
EMC: Elder Medical Care
EMR: Electronic Medical Record
GBMC: Greater Baltimore Medical Center
GBMC-PI: The Greater Baltimore Medical Center Pathways Initiative
HIE: Health Information Exchange
HUM: Helping Up Mission
IP: Inpatient
PAU: Potentially Avoidable Utilization
PCMH: Patient Centered Medical Home
PCP: Primary Care Physician
SDOH: Social Drivers of Health

Introduction

Executive Summary of the Project

The GBMC HealthCare System is a prominent health care provider in Greater Baltimore, known for its comprehensive and integrated approach to medical services. This system encompasses three key components: the Greater Baltimore Medical Center, GBMC Health Partners, and Gilchrist. Each component plays a vital role in fulfilling the organization's mission.

- **Greater Baltimore Medical Center**: As a 257-bed hospital, it serves as the hub for acute medical services, offering a wide range of care from emergency treatment to specialized surgeries.
- **GBMC Health Partners**: This network of over 30 physician practices extends across multiple specialties, facilitating a continuum of care from primary to specialized services. The extensive reach of these practices enhances access to healthcare, ensuring community members receive the necessary care within their local environment.
- **Gilchrist**: Dedicated to serious illness and end-of-life care, Gilchrist provides compassionate and comprehensive services for patients and their families during critical life moments. Its focus on palliative care and hospice services addresses the emotional, physical, and spiritual patient needs, underscoring GBMC's commitment to holistic care.

In February 2022, GBMC HealthCare was honored as one of nine recipients of the prestigious "Pathways to Health Equity" grant, funded by the Maryland Community Health Resources Commission. This initiative is a testament to GBMC's commitment to addressing the persistent health disparities and enhancing the health outcomes in Maryland's underserved communities.

The grant supports a two-year project, from May 1, 2022, to April 30, 2024, and is strategically aligned with the Pathways program's five core initiatives:

1. **Reducing Health Disparities**: Tackling the unequal health burdens found in underrepresented populations through targeted community interventions and services.
2. **Improving Health Outcomes**: Enhancing the quality of healthcare delivery to ensure better health results across all demographics.
3. **Improving Access to Primary Care**: Expanding the availability of primary healthcare services to ensure that essential health care is accessible to all community members, especially those in underserved areas.
4. **Promoting Primary and Secondary Prevention Services**: Encouraging the adoption of preventive health measures and early disease detection practices to mitigate the risk of chronic diseases, while reducing the need for expensive medical interventions.
5. **Reducing Healthcare Costs**: Focusing on strategies that decrease the necessity for hospital admissions and readmissions, thereby lowering the overall healthcare costs for patients, hospitals, and Maryland taxpayers.

This project underscores GBMC's proactive approach in pioneering comprehensive health care reforms aimed at creating a more equitable healthcare environment within Maryland.

Section 1: Background and Project Plan

The key interventions are aimed to improve access to healthcare in Baltimore City through expansion of the number of new patients at GBMC Health Partners at Jonestown and Gilchrist's Elder Medical Care Program (EMC). Patients receive comprehensive primary and preventive care services including vaccinations and screenings, disease management, and care coordination services. EMC provides primary care in the homes of frail elders unable to get to the Jonestown practice. Patients are evaluated and offered support in addressing Social Drivers of Health (SDOH) needs.

GBMC established agreements with and funded community-based organizations to address SDOH needs including food, transportation, legal aid and housing. These organizations have longstanding relationships and service to the targeted communities. GBMC also collaborates with these organizations to provide health screenings, wellness workshops, exercise classes clinics, and other pop-up health events. These events also serve as recruitment opportunities for the Jonestown practice and EMC to ensure that community residents have access to care and a primary care provider.

Overall Project Plan

The project goals related to addressing diabetes, hypertension, and obesity were achieved by implementing GBMC's proven patient-centered medical home (PCMH) model in Baltimore City, both in its existing Jonestown practice and in frail elderly patients' homes. GBMC has a well-established framework for implementing a PCMH model, including the technology and expertise needed to monitor and improve health outcomes. GBMC has a demonstrated record of reducing hospital admissions and readmissions as well as the overall cost of care per patient.

All patients received comprehensive primary care services, preventive care including vaccinations and screenings, and access to a 24/7 patient portal. EMC provided this same level of care to Baltimore City's frail elders in their homes.

New Patient Enrollment Goal

The project goal for new patient enrollment is **2,050 patients**, with 1,800 to be seen at the Jonestown practice and 250 through EMC.

Expected project impacts include prevention of chronic disease and better disease management for underserved communities in Baltimore City. Populations of focus included Black/African Americans, Hispanics and seniors who are more likely to struggle with chronic conditions. Forming relationships with a designated primary care provider ensured that patients have the tools and resources needed to avoid a health crisis and improve overall health outcomes. GBMC tracked health outcomes, particularly A1C levels, blood pressure and BMI.

GBMC anticipated significant health improvements, projecting a 20% reduction in emergency visits related to diabetes and hypertension. Additionally, the initiative aimed to ensure that 25% of eligible patients receive targeted support to address social drivers of health that adversely affect their conditions.

Target Service Population and Designated Geographic Service Area

The project focused on two populations (1) individuals from low-income, predominantly minority communities (Black/African American and Hispanic residents) with diabetes, hypertension, or obesity and (2) frail, elderly residents who needed in-home healthcare. The two populations received care through the Jonestown physician practice and Gilchrist's EMC program.

The population of 30,000 residents in the target geography is mostly Black/African American, with a secondary Hispanic presence. Communities within this service area experience high rates of chronic disease; persistent socioeconomic and racial disparities; designated health provider shortages and medically underserved areas; and poor primary and geriatric service delivery when compared to nearby areas of Baltimore City and Maryland overall. Elders in the project region have 10.18 diabetes admits (state average 4.24) per thousand (CRISP). Hospital admission rates are more than twice the state rate. Black/African Americans, Hispanics, and adults over 65 have the highest hypertension diagnosis rates and the lowest rates of disease control. Nearly half of the residents with income below $25,000 have high blood pressure. Obesity is a risk factor for both diabetes and hypertension, and nearly 70% of residents are either overweight or obese with significant racial disparities.

Target Geography

The initial target area focused on two zip codes (**21202, 21218**) comprised of six communities within East Baltimore City. However, **as no patient was turned away, all new patients within Baltimore City and beyond received care** as part of the Pathways project.

During project implementation, and with input from community partners, it was determined that focusing on only two zip codes proved too restrictive when meeting the needs of the community. The CHRC approved a grant modification to expand the geographic focus to cover additional contiguous zip codes.

Section 2: Evaluation Plan

Purpose of the Evaluation

The purpose of this evaluation was to assess the effectiveness of the Greater Baltimore Medical Center Pathways Project Initiative (GBMC-PI) by examining enrollment rates, characteristics of the population served, and relevant process and outcome measures.

Evaluation Framework

Evaluation of the GBMC-PI initiative used a structured logic model approach (see Figure 1) for meeting the overarching goal to **reduce health disparities for hypertension, diabetes, and obesity in minority, lower income, and older populations** and improve healthcare access and primary care in Baltimore City and beyond.

Evaluation Criteria

Figure 1 depicts the logic model for this evaluation. The evaluation inputs include funding for outreach, awareness, marketing, and addressing social drivers of health (SDOH), as well as expanding staff positions in healthcare practices such as Jonestown and Elder Medical Care (EMC).

The activities section details the strategies employed to utilize these inputs, such as conducting marketing campaigns across various media, engaging the community through health-related events, hiring and training culturally competent staff, and performing targeted health screenings and SDOH assessments. Participation metrics are the direct results of these activities, such as the number of people reached by the marketing campaign, the number of community events held, and the number of staff hired and trained. Outcome metrics include community members participating in walks, receiving biometric screenings, and being educated on health conditions such as diabetes, hypertension, and obesity.

In addition to noted outcomes, there was an aim for a substantial portion of those referred for behavioral health care to engage in treatment and for those identified with SDOH needs to receive support, highlighting the program's comprehensive approach to healthcare improvement.

Example Outcomes

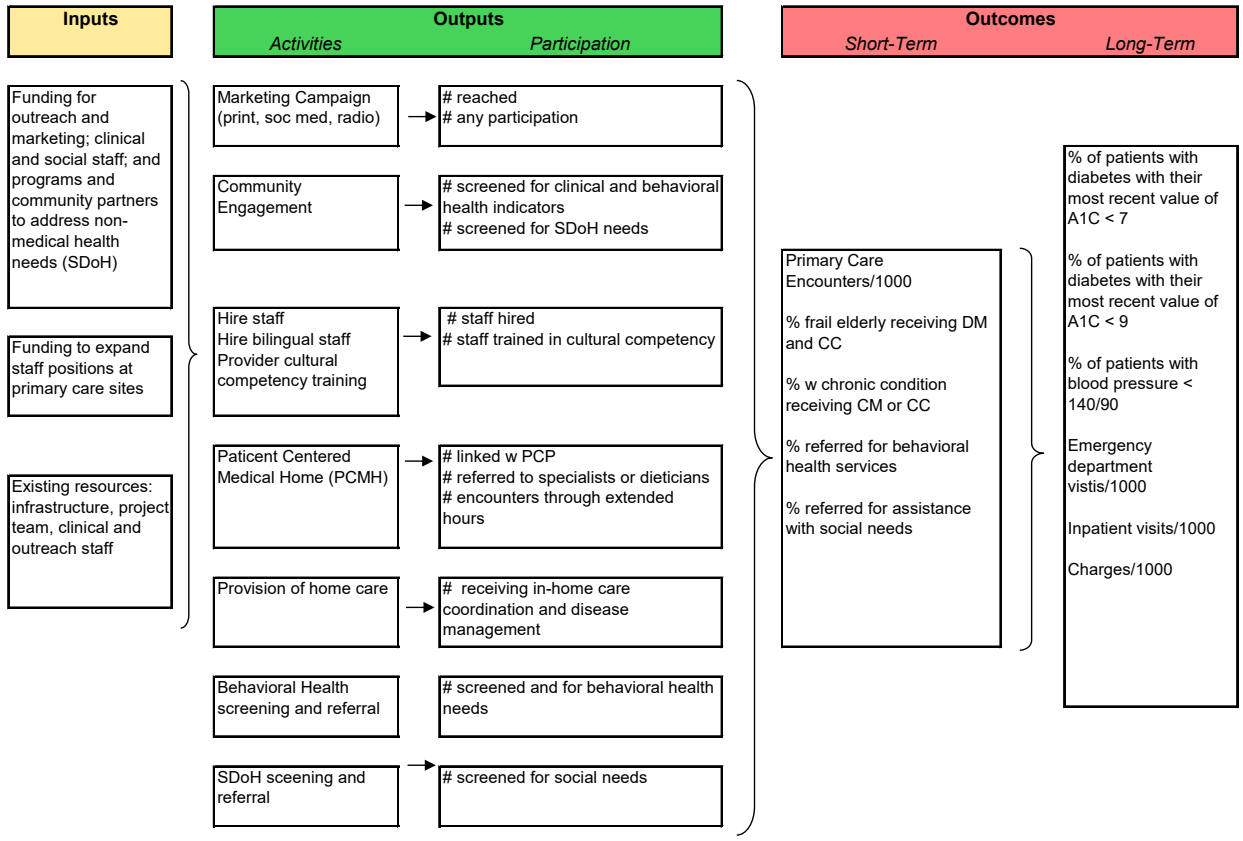
Short Term:

- # Healthcare Encounters
- # Patients Linked with PCPs
- Referrals from Community Events

Long Term:

- Specific Health Metrics Improvements (ED / Inpatient Visits
- Healthcare Costs

Figure 1. GBMC Pathways Initiative Evaluation Logic Model

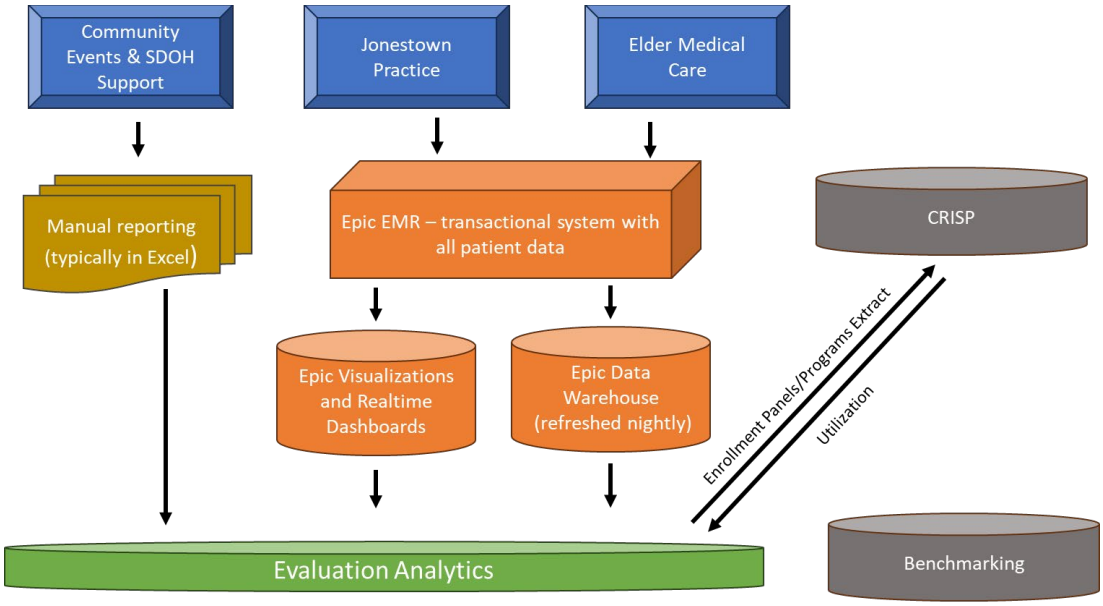


Data Sources

Data was primarily collected by staff and community partners at community events; through electronic medical records at GBMC, and through health information exchange services by the Chesapeake Regional Information System for Patients (CRISP).

Figure 2 illustrates the data flow and analytics process for the GBMC Pathways initiative. Data collection at GBMC HealthCare System was conducted with meticulous precision using both manual and electronic methods. During community events, essential engagement metrics were captured by manually entering detailed records into Excel spreadsheets. In clinical environments such as Jonestown Practice and Elder Medical Care (EMC), patient interactions were systematically documented using the Epic system. Data collation was enhanced by the CRISP HIE platform. The platform delivers benchmarking perspectives which were then utilized for comparative analysis, culminating in a sophisticated analytical framework that supports the ongoing evaluation and enhancement of the Pathways initiative.

Figure 2: Data Sources and Flow



Community Engagement and Events

Community partners collaborate with GBMC HealthCare System by reporting the number and type of events, as well as the attendance and services provided, using Excel spreadsheets. This data was submitted to GBMC's analytics department, which then consolidated and summarized the information to provide a comprehensive overview of community engagement and service delivery throughout the duration of the initiative.

GBMC Primary Care Component

Epic Software

GBMC uses the comprehensive Epic software system to track patients throughout their care journey, resulting in **"one patient, one record," no matter where patients seek care.**

The Epic system receives data from transactions of care and aggregates this data for reporting and data visualization and organizes the data in analytical data models in its data warehouse. Epic was the source of data used in the reporting of demographics (age, gender, race, ethnicity, location), primary care and Helping Up Mission (HUM) enrollment and usage, clinical indicators (chronic conditions, body mass index (BMI), depression screening, blood pressure, hemoglobin (A1C), and interventions (disease management, care coordination, referrals, closed loop referrals, receipt of treatment for positive health screening). Social need data (financial strain, food insecurity, transportation needs) was self-reported by patients during clinical visits and was reportable through the Epic system.

Benchmarking

Wherever possible, local Baltimore City benchmarks were used to compare findings. A list of sources used for benchmarking include:

- Baltimore Neighborhood Indicators Alliance (Vital Signs). https://bniajfi.org/vital_signs/
- Baltimore City Health Department. https://health.baltimorecity.gov/programs/chronic-disease-prevention
- Centers for Disease Control and Prevention Diabetes Surveillance. https://gis.cdc.gov/grasp/diabetes/diabetesatlas-surveillance.html#

- Maryland Behavioral Risk Factor Surveillance System. https://health.maryland.gov/phpa/ccdpc/Reports/pages/brfss.aspx.

Methods

This evaluation employed a retroactive descriptive approach to examine various facets of the initiative. Percentages and averages were correlated and analyzed to describe the population and outcomes accurately. Where feasible, local and state benchmarks were utilized to provide context to the findings. This methodological framework ensured a structured and purposeful evaluation of the intervention, offering valuable insights into its reach, implementation, and outcomes within the constraints of the available data.

Evaluation Strategy

Examination of results to target rates and pre-post analyses are used to tease out the effectiveness of the initiative in the absence of the ability to create and gather data for a comparable group with similar characteristics.

The following domains and measures were the focus of this evaluation:

Enrollment Rates: Enrollment rates were evaluated to assess the reach and adoption of PCP interventions within the target population. This analysis tracked the number of newly enrolled, unduplicated individuals who received grant-funded services through GBMC's primary care-based initiatives and the number of people benefiting from grant-funded services through community-based initiatives.

Population Served: Descriptive analyses were conducted on the demographic and baseline characteristics of the population served. This included age, gender, race, ethnicity, socioeconomic status, and any relevant health status indicators at the time of enrollment. This analysis helped in understanding who the intervention served and whether it reached the intended demographic segments.

There were 5 subgroupings of interest in our population:

- Black, African American Participants
- Hispanic Participants
- Older Adult Participants
- Participants with Low Income
- Participants with Chronic Conditions

Process Measures: These measures offered insights into the effectiveness of the intervention and helped identify areas that presented challenges for improvement.

Process Measures

The process measures involve the **evaluation of the implementation** of the intervention. Key components include fidelity to the initiative's **staff enhancement and service offerings, the number and types of services delivered, and participant engagement** levels.

Key process metrics were in the categories of:

- Community marketing, events, activities, and participation
- GBMC Primary Care Component
    - Primary care linkage and visits
    - Extended hours care

    - Care and disease management support
    - Screening and referral

Outcome Measures:

Outcome measures include:

- % of patients with diabetes with their most recent value of A1C < 7
- % of patients with diabetes with their most recent value of A1C < 9
- % of patients with blood pressure < 140/90
- Inpatient visits per thousand
- Emergency department visits per thousand
- Potentially avoidable visits per thousand
- Charges per thousand

Section 3: Results

Community Component

The marketing campaign, which was part of the community component of the intervention reached 553,632 community members, well beyond the target of 60,544. In addition, thirty-seven community events were held to provide blood pressure, blood glucose and BMI screening and education. Over 6000 community members received education about diabetes, hypertension, and more than 350 of those received screening.

One hundred and nine community events were held to address social drivers of health needs. The number of community members with food insecurity who received food assistance was over 3300. Over 58,000 pounds of food were provided to community members.

Community Highlights
Marketing Campaign (People Reached):
Goal: 60,544
Actual: **553,632**
Educating Community (People Reached):
Goal: 1,500
Actual: **>6000**
Addressing SDOHs (Events Held):
Goal: 48
Actual: **109**

Primary Care Component

Structure

A foundational element of success in this initiative was the hiring and training of a diverse workforce of physicians, advanced practitioners, care managers, and support staff.

Demographics

Table 1 describes demographic and enrollment characteristics of the population served. Over 1500 individuals participated in the Pathways initiative. Tracking toward objectives to target resources to underserved groups, Black/African American people represented 53% of the population, adults over the age of 65 represented 27% and those with financial strain represented 22% of the served population.

Forty-Eight percent of the entire served population were female. The largest portion of the population (71%) were of working age between 18 and 64 years old. The second largest group were those 65 and older (27%). The population served was from diverse ethnic and racial backgrounds. The majority were Non-Hispanic Black (52%) followed by Non-Hispanic White (35%), and Non-Hispanic Asian (3%). Five percent of the population was Hispanic.

Table 1. Descriptive Information for GBMC Primary Care Population

	Total Population	Obesity	HTN	Diabetes	Black Race	Hispanic Ethnicity	Age>65	Helping Up Mission (HUM)	High Financial Risk Strain	Black Race with Diabetes
	100%	16%	38%	14%	52%	5%	27%	22%	22%	9%
%(n) Female	48%	57%	51%	53%	46%	48%	64%	15%	25%	56%
Mean Age	53	46	71	68	50	37	82	44	46	66
Race										
%(n) Non-Hispanic White	35%	28%	33%	23%	<1	<1	49%	40%	36%	<1
%(n) Non-Hispanic Black	52%	62%	57%	64%	99%	<1	42%	46%	53%	99%
% Hispanic	5%	6%	3%	4%	2%	100%	2%	7%	6%	<1
Conditions										
%(n) Obesity	16%	100%	21%	23%	20%	20%	9%	14%	18%	24%
%(n) Hypertension	38%	49%	100%	77%	42%	22%	71%	25%	34%	82%
%(n) Diabetes	14%	20%	28%	100%	17%	12%	28%	5%	12%	100%
All Condition	3%	15%	7%	18%	3%	1%	4%	<1	2%	19%
Enrollment										
%(n)Jonestown	77%	87%	58%	56%	84%	92%	20%	100%	99%	64%
%(n) Elder Medical Care	23%	13%	42%	44%	16%	8%	80%	<1	1%	36%
%(n) HUM	22%	19%	15%	8%	20%	31%	1%	100%	54%	7%

This initiative sought to improve health outcomes through high-quality primary care by connecting participants to comprehensive health care delivery in three settings. Jonestown Primary Care Medical Home was the setting for 77% of participants to receive primary care. Elder Medical Care provided in-home primary care for 23% of participants. The Helping Up Mission component of Jonestown Primary Care provided care for substance use for 22% of participants.

Care Delivery Setting
Jonestown Primary Care 77%
Elder Medical Care 23%
Helping Up Mission (Substance Abuse Care) 22%

Certain subgroupings were of particular interest for this initiative. The subgroupings and highlighted descriptive information are provided in the following paragraphs:

Black/African American Participants

One of the goals of the initiative was to target services to underserved communities. 52% of the newly enrolled patients were Black/African American. Black/African American participants have rates of obesity (20%), hypertension (42%), and diabetes (17%) slightly higher than the overall population served. Many of the Black/African Americans participants were enrolled in Jonestown primary care (84%) and received services in parallel with the Helping Up Mission (HUM) at 20%.

Hispanic Participants

Those of Hispanic ethnicity are known to also experience health disparities at a higher rate. In our population 5% were Hispanic. They were predominantly younger, with the highest representation in the 18-33 years old age group at 53%. The majority of those who were Hispanic received primary care at Jonestown (92%) and showed notable participation in the Helping Up Mission (31%).

Older Adult Participants

People 65 years and older accounted for (27%) of the population. The majority were in the 79+ years old bracket (61%) with the remainder between 65-78 years old (39%). The majority received their primary care through Elder Medical Care services (80%).

Participants with High Financial Strain

In this initiative services were targeted at people with low income. This group represents 22% of the total population. Most people experiencing high financial strain were between the ages of 34-64 (74%). Those with high financial risk strain had a significant presence at Jonestown (99%) and received services from the Helping Up Mission (54%)

Low-Income

22%

of people served self-identify as having "high financial strain."

Participants with Chronic Conditions

People with diabetes (14%), hypertension (38%), and obesity (16%) were the focus of this initiative. When people have more than one of these conditions, their risk for poor health outcomes increases. Of those with diabetes 23% also have obesity and 77% also have hypertension. All three conditions were present in 3% of the population. Most people with diabetes and hypertension tended to be over the age of 34 (97% and 95% respectively) while a larger portion (60%) of those with obesity were under the age of 49.

Overall Impact

Primary Care Enrollment and Visits

Table 2 presents a comprehensive assessment of key process and clinical outcome measures. The data reflects a high linkage rate to primary care providers (PCPs), with 98% of individuals newly connected with a PCP. This linkage was consistent across subgroupings.

The data also suggested strong engagement with primary care services, as evidenced by a rate of 3.4 primary care encounters per person enrolled. Follow-up visits among the population are important in the management of chronic diseases like diabetes. People with diabetes, hypertension, and obesity had 4.2, 4.5, and 4.2 primary care visits per person respectively. This indicated that providers and patients have subsequent visits concerning diabetes management and overall care management of chronic disease.

PCP Linkage & Engagement

98%

of community members referred to primary care successfully linked to a PCP

3.4

primary care encounters per enrolled participant

Care and Disease Management

In our population, 59% of all participants received care management (CM) and care coordination (CC). These services were focused on those with chronic illness as demonstrated by 69% of those with obesity, 57% of those with hypertension, and 61% of those with diabetes receiving CM and CC. In-home care and disease management were provided to frail elders with 80% receiving these services.

Clinical Screening and Referrals

High levels of clinical screening was provided among participants, with 91% receiving BMI screening and 99% receiving blood pressure screening. A1C screening rates were lower at 40%.

Behavioral health screenings were well conducted at 84% and 11% screening positive and referred for further help. Lastly, 63% were referred to specialists and dieticians for advanced testing and management.

The data suggests strong performance in screenings but indicates opportunities for better understanding of the challenges of capturing screening in the over 65 age group. Screening rates in the over 65 age group were at 69% for BMI and 24% for A1C.

Clinical Highlights

91%
received BMI screening

99%
received blood pressure screening

87%
of those screened achieved blood pressure control

94%
of those screened had an A1C < 9

Impact on Clinical Outcomes

Goals for A1C results exceeded set targets. When considering all participants, 34% were known to have achieved an A1C level below 7, with a significant increase to 83% when considering only those who were screened. Most notably, 94% of overall participants screened had an A1C <9. Considering those with diabetes who have been screened for A1C, 28% were below 7 and 72% were below 9.

Blood pressure control was a highlight, with 86% of all participants achieving BP control at or below 140/90, and an even higher rate of 87% among those screened, exceeding targets. Examining those with hypertension, 72% overall and 73% of those screened achieved BP control.

Impact on Identification and Referral of Social Needs

Among all participants, 69% were screened for social drivers of health (SDOH) needs. The highest screening rates were seen in the high financial risk strain and Helping Up Mission (HUM) populations, at 100% and 88% respectively. Opportunities to improve screening rates were highest in the >65 age grouping. Referral rates for help with SDOH were 59% overall.

Table 2. Process and Outcome Results for GBMC Primary Care Population

	Total Population	Obesity	Hypertension	Diabetes	Black Race	Hispanic Ethnicity	Age>65	Helping Up Mission (HUM)	High Financial Strain	Black Race with Diabetes
	100%	16%	38%	14%	52%	5%	27%	22%	22%	9%
Primary Care Enrollment and Visits										
%(n) newly linked with PCP (Total)	98%	99%	96%	97%	99%	99%	93%	100%	100%	98%
%(n) newly linked with PCP (Jonestown)	77%	87%	58%	56%	84%	92%	20%	100%	99%	64%
%(n) newly linked with PCP (EMC)	21%	12%	39%	41%	15%	7%	73%	<1	1%	33%
Care and Disease Management										
%(n) frail elderly receiving disease management or care coordination in home	23%	13%	42%	44%	16%	8%	80%	<1	1%	36%
%(n) with chronic disease who receive CM and CC	59%	69%	57%	61%	67%	67%	34%	99%	90%	66%
Clinical Screening and Referrals										
%(n) receiving BMI screening	91%	96%	84%	84%	90%	97%	69%	100%	99%	85%
%(n) screened for A1C	40%	66%	44%	62%	47%	42%	24%	48%	47%	67%
%(n) screened for blood pressure	99%	100%	99%	100%	99%	100%	97%	100%	99%	100%
%(n) screened for behavioral health	84%	94%	73%	75%	87%	94%	48%	97%	98%	78%
%(n) who were referred for behavioral heatlh services	11%	18%	10%	10%	13%	13%	3%	7%	11%	13%
%(n) referred to specialists and dieticians	63%	72%	68%	70%	67%	66%	56%	66%	70%	77%
Clinical Outcomes										
%(n) most recent A1C <7 (of those screened)	83%	82%	72%	28%	80%	88%	63%	90%	83%	28%
%(n) most recent A1C <9 (of those screened)	94%	96%	91%	72%	93%	97%	91%	95%	91%	71%
%(n) achieving BP control <= 140/91 (of those screened)	87%	82%	73%	79%	84%	95%	83%	90%	88%	78%
SDoH Screening and Referral										
%(n) screened for SDoH needs	69%	79%	55%	58%	75%	78%	24%	88%	89%	66%
%(n) with unmet transportation needs	29%	24%	34%	39%	27%	32%	26%	45%	66%	36%
%(n) with food insecurity	36%	31%	41%	41%	39%	33%	31%	52%	76%	39%
%(n) with housing instability	39%	37%	38%	38%	39%	40%	19%	59%	80%	40%
%(n) with financial strain	30%	27%	33%	31%	28%	32%	13%	56%	100%	26%
%(n) with social isolation	44%	50%	42%	46%	44%	40%	42%	47%	58%	49%
%(n) stress concerns	40%	40%	43%	46%	38%	40%	25%	47%	68%	43%
%(n) referred for help with SDoH	59%	69%	69%	72%	60%	55%	63%	65%	81%	73%

Impact on Utilization and Cost

Across the board, utilization and cost measures showed remarkable improvement with decreases observed in all except one which has not detracted from the overall success achieved. Furthermore, a significant number of these measures have surpassed our initial goal, with reductions exceeding 20%, and astonishingly, some have even plummeted by over 60%, underscoring the magnitude of achievements.

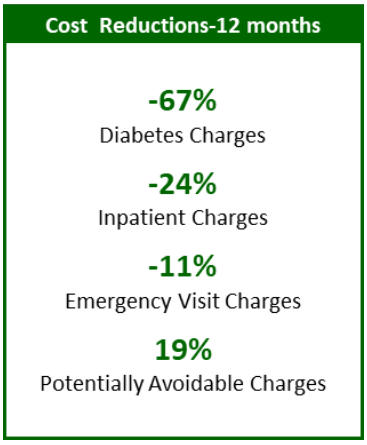
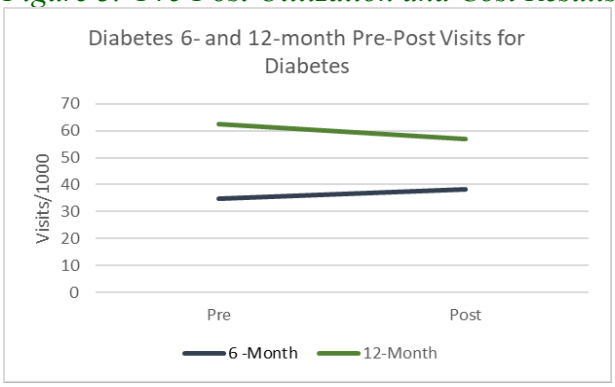


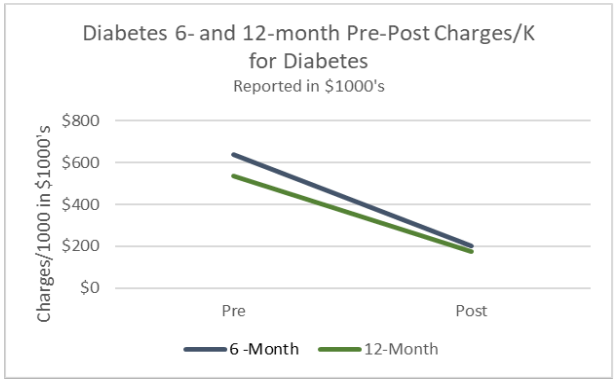
Figure 3 and Table 3 show the details of these changes over time. Notably, there was a 39% decrease in inpatient admissions at 6 months and a 23% decrease at 12 months. ED visits decreased by 29% at 6 months and 15% at 12 months. Potentially avoidable utilization (PAU) visits saw a 19% decrease at 6 months, and 24% at 12 months.

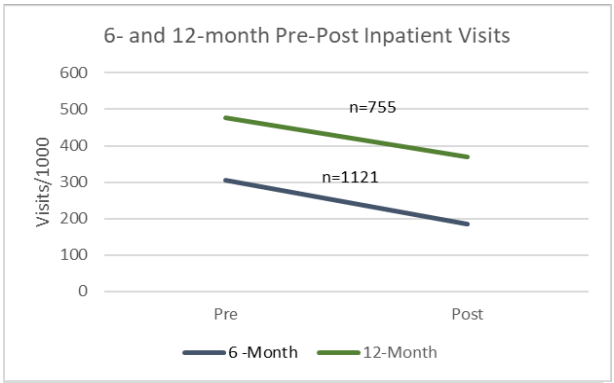
These remarkable decreases in utilization translated into a substantial reduction in costs across the board. In every cost category examined, expenditures witnessed significant declines. For instance, charges per unit for diabetes-related care over both six and twelve-month periods plummeted by an impressive 69% and 67% respectively. Similarly, charges for inpatient services saw substantial decreases, with reductions of 48% and 24% over six and twelve months, respectively. Furthermore, emergency department charges decreased by 27% and 11% over the same periods, while charges for potentially avoidable utilization saw declines of 31% and 19% over six and twelve months, respectively.[1]

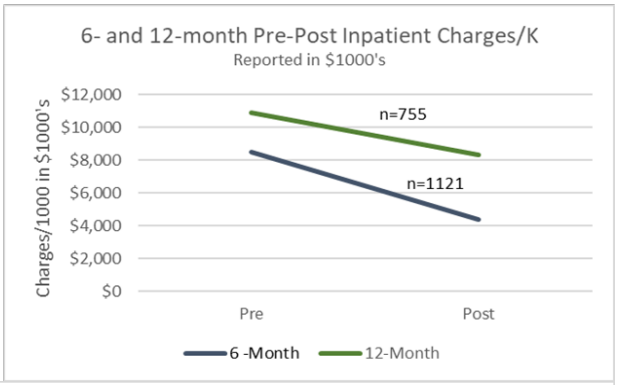
[1] In partnership with Maryland's Health Information Exchange (HIE), Chesapeake Regional Information System for our Patients (CRISP), we have utilized their Pre/Post analysis to assess the financial impact of the Palliative Care Gilchrist program on our patients. Pre/Post presents utilization and charges data for 1, 3, 6, and 12 months pre and post enrollment into a program. This analysis included case-mix data through 3/31/24. Data provided by CRISP using HSCRC IP and OP case-mix data, including all inpatient discharges and outpatient hospital visits at Maryland acute care hospitals. Analysis includes all visit types combined: IP, ED, OBS>23hrs, and OP Visits. CRISP Pre/Post does not adjust for death or discharge from a program.

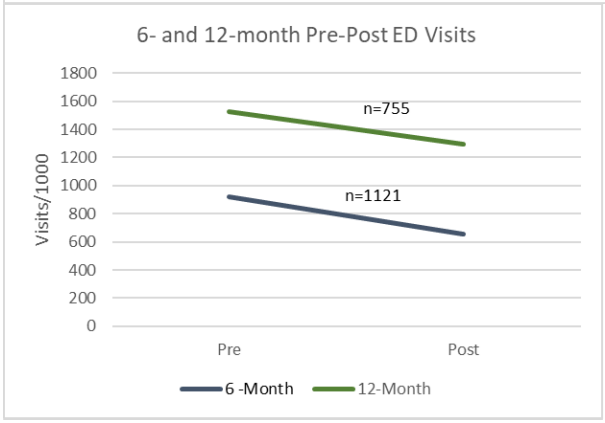
Figure 3. Pre-Post Utilization and Cost Results

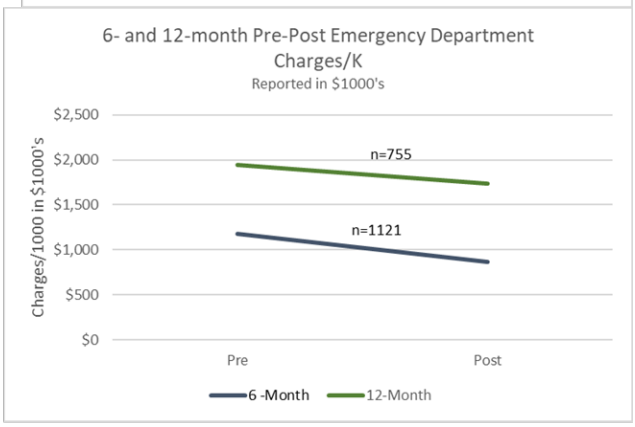


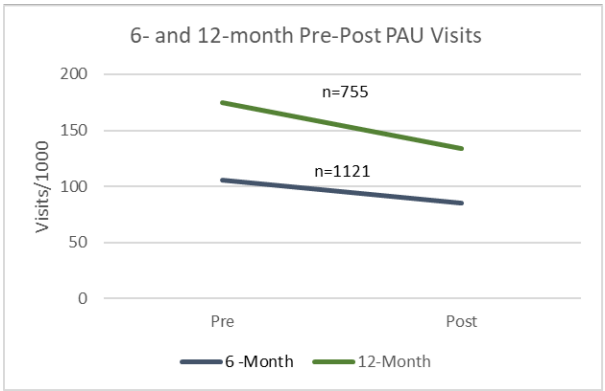












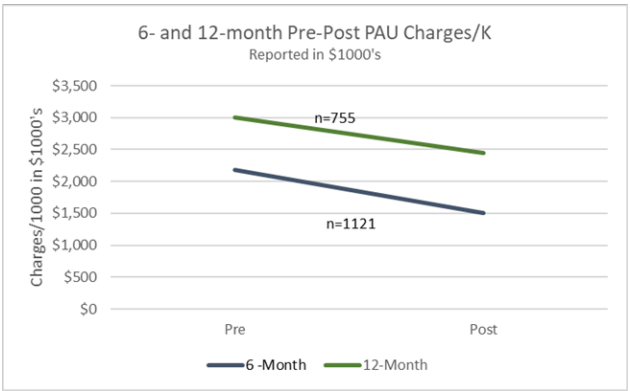


Table 3. Pre to Post Change in Utilization and Cost Measures

Pre to Post % Change in Utilization and Cost	
Measure	**% Change Pre to Post**
Utilization	
Visits for Diabetes 6-month	**10.3%**
Visits for Diabetes 12-month	**-8.5%**
Visits Inpatient 6-month	**-38.9%**
Visits Inpatient 12-month	**-22.8%**
Visits ED 6-month	**-28.6%**
Visits ED 12-month	**-15.3%**
Visits PAU 6-month	**-18.7%**
Visits PAU 12-month	**-23.5%**
Charges	
Charges/K for Diabetes 6-month	**-68.6%**
Charges/K for Diabetes 12-month	**-67.1%**
Charges/K Inpatient 6-month	**-48.4%**
Charges/K Inpatient 12-month	**-23.5%**
Charges/K ED 6-month	**-26.5%**
Charges/K ED 12-month	**-10.6%**
Charges/K PAU 6-month	**-31.2%**
Charges/K PAU 12-month	**-18.5%**

Total Cost Reductions

CRISP utilization data was analyzed to estimate reductions in total cost of care. With guidance from CRISP, it was determined that the total reduction in cost was $10,498,960.

Total Cost Reductions
Pre-Charges: $23,091,127 Post-Charges: $12,592,166 **Reduction: $10,498,960**

Impact Based on Designated Geography and Race/Ethnicity Data

According to Baltimore Neighborhood Indicators Alliance (BNIA), the Baltimore City population is 61% Black/African American Non-Hispanic.[2] The percentage of Black/African American individuals in this initiative was 52% overall.

When it comes to chronic conditions, this initiative served a proportion of those living in Baltimore City that is similar to, and slightly higher, than the overall prevalence rate. In 2021 the prevalence of diabetes in Baltimore was 11.3% and, in the Black, non-Hispanic group that rate

[2] Baltimore Neighborhood Indicators Alliance. https://bniajfi.org/community/Baltimore%20City

was 12.9%.[3] This initiative served 14% with diabetes and 9% of individuals are Black/African American with diabetes. When considering hypertension, 36.4% of the Baltimore population has hypertension, and that rate is higher for those who are Black, non-Hispanic at 44.6%.[2] In this initiative, 38% of the population had hypertension and 42% of the Black/African American participants had hypertension.

Low-Income Representation

In the GBMC-PI population, **a substantial portion of residents have high financial strain at 23%** . In comparison, **the Baltimore city population has 15%** of family households living below the poverty line.

To determine the impact of improved diabetes care on removing health disparities, the care of those with diabetes who are also Black/African American was compared to the overall group with diabetes. (See table 4). These data suggest that screening rates and outcomes for diabetes were similar to the Black/African American subgroup with diabetes compared to the overall group with diabetes.

Table 4. Comparison of Diabetes-Related Clinical Screening and Outcomes Between All People with Diabetes and Those who are Black and Have Diabetes

	Diabetes	Black/African Americans with Diabetes
Clinical Screening and Referrals		
%(n) receiving BMI screening	84%	85%
%(n) screened for A1C	62%	67%
%(n) screened for blood pressure	99%	100%
Clinical Outcomes		
%(n) most recent A1C <7	17%	18%
%(n) most recent A1C <7 (of those screened)	28%	27%
%(n) most recent A1C <9	45%	48%
%(n) most recent A1C <9 (of those screened)	71%	71%
%(n) achieving BP control <= 140/90	79%	77%
%(n) achieving BP control <= 140/91 (of those screened)	77%	75%

We used bivariate statistical testing to determine whether screening and clinical outcomes differed between those who are Black/African American with diabetes and those from other races with diabetes. Our premise was that if screening and positive diabetes outcomes are reached in Black/African American participants at a rate that is similar to and not statistically significantly lower the overall population with diabetes, then the initiative is effectively removing health disparities for Black/African Americans.

[3] Maryland Department of Health Behavioral Risk Factor Surveillance System. https://ibis.health.maryland.gov/ibisph-view/query/result/brfss21/BpHigh4/Crude.html

No statistical significance was found between the two groups regarding screening and clinical outcomes, this result supports the conclusion that the initiative to address health disparities in diabetes care among Black/African American individuals was effective. The lack of significant differences in screening and clinical outcomes suggests that both Black/African American individuals and those of other races are receiving comparable levels of care. This is indicative of an equitable healthcare delivery system, at least in the context of the services measured (e.g., BMI screening, A1C control).

Acknowledgements

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