FY'19 Year 3 Report for MedStar House Call Program (MHCP)
September 20, 2019

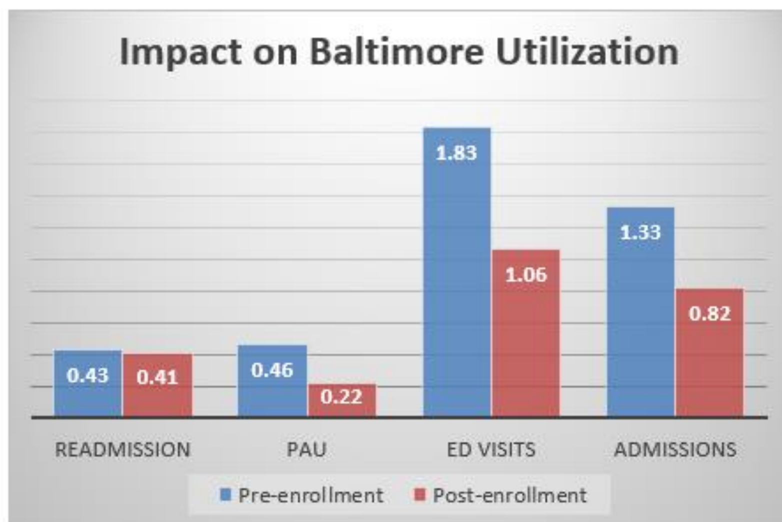
Summary of Program Objective & Outcome Metrics

The HSCRC grant funded the expansion of MedStar's successful DC-based House Call Program into Baltimore City, Maryland. We began seeing patients in July, 2016. As of October, 2016 the Baltimore practice was fully-staffed and our efforts turned toward patient recruitment. In Year 2 of the HSCRC implementation grant (July 2017 – June 2018), the Baltimore team continued to expand. In Year 3 (July 2018 – June 2019), our sights remained focused on scaling the model and demonstrating impact on total costs of care. While patient enrollment has been less than anticipated, impact on cost savings has been high, as we expected with preliminary results.

From the start of the program through June 30, 2019, the Baltimore team enrolled a total of 290 patients, with an active census of 139. This is up from an active census of 83 as of July 2017. The average age of our patients is 81 (compared to 85 years in the well-established DC home-based primary care teams). 68% of patients are African-American and 76% are female. 79% of patients are covered by Medicare FFS, and 23% have Medicare Advantage. 35% of the patients are also dual-eligible for Medicaid. The program accepted all frail elders who qualified for home-based primary care services in our service catchment. (For purposes of HSCRC initiative, none of the funds were used for Medicare Advantage patients). House Call patients are very ill and complex, with a mortality rate of about 33% per year.

Update on JEN-Westat Associates Impact Study

The ongoing impact study being conducted with JEN-Westat Associates yielded promising initial findings with the Baltimore team. Corroborating anecdotal evidence from the care team, the study confirmed that Baltimore patients are both sicker and more prone to acute utilizations compared to the well-established DC teams. Baltimore patients are younger albeit with significantly higher prevalence of atrial fibrillation, chronic kidney disease, COPD, depression, hyperlipidemia, and ischemic heart disease (higher HCC overall). Compared to DC, Baltimore patients had higher rates for admission, ED visits, readmissions and potentially avoidable utilization (PAU). As a result, Baltimore patients also had commensurately higher total costs compared to the DC census. **As hoped, pre-/post-analysis of the Baltimore census highlights that enrollment in MHCP is an effective intervention to changing utilization patterns with this frail elderly population.** In the year following MHCP enrollment, Baltimore patients saw a 38% decrease in admission, a 42% decrease in ED visits, a 50% reduction in PAU, and a 5% reduction in readmissions. This shift in utilization is accompanied by a commensurate reduction in total cost.



**Utilizations given in events per patient-year. Cost given in terms of per member per month in Baltimore.*

The next step in the JEN-Westat Associates impact study is to create a matched cohort of patients with similar characteristics to the Baltimore census who did not receive the MHCP intervention. Comparison between the MHCP intervention group and the controls will confirm the size and significance of the impact of MHCP on frail elders who have difficulty leaving the home to seek primary care. As a secondary objective, the study will also stratify the MHCP census to identify characteristics of enrolled patients who see a more significant benefit through the home-based primary care intervention.

Success Measures

For some of the following outcome measures, "patient-years" is used in place of "per capita" since patients may be enrolled in MHCP for a few weeks or a few years. Patient-years is defined as total number of years that patients are active in the MHCP program July 1, 2018 through June 30, 2019 (FY19). In managing this grant, the need for greater data access from payer sources is a common theme. We are still unable to report on some measures due to lack of claims data.

Measure	Definition	Source	*MHCP* Approach	*MHCP* Year 3 Report
Total hospital cost per capita		HSCRC Casemix Data	*MHCP* will use the JAGS 2014 data to establish a baseline for all patients (De Jonge et al., 2014). We will monitor this using HSCRC Casemix data and anticipate a 21% reduction in total hospital costs for the population of patients enrolled.	**Report pending completion of JEN-Westat Impact Study** The only source of all-site hospital cost information is the CRISP PaTH reports. The PaTH data is summarized by patient, without date of service, so we cannot determine whether the cost was incurred during MHCP enrollment. Also, PaTH reports provide only year-long data on the *active* census – leaving out information on disenrolled patients.
Total hospital admits per patient-year		HSCRC Casemix Data	*MHCP* will use the JAGS 2014 data to establish a baseline for all patients	**Admits in Reporting Period:** 132 **Admits per Patient-Year:** 0.90

			(De Jonge et al., 2014). We will monitor this using HSCRC Casemix data and anticipate a 10% reduction on this measure.	
Total health care cost per person		HSCRC Total Cost Report	*MHCP* will use a mixture of the JAGS 2014 data and the IAH Medicare Demonstration data to establish a baseline for patients enrolled. We will monitor this using Medpar data and anticipate a 13% reduction in total health care cost per patient.	**Report pending completion of JEN-Westat Impact Study** Currently, MHCP has no access to total health care cost data (claims). CRISP has access but is unable to share under the present data use agreement (DUA).
ED visits per patient-year		HSCRC Casemix Data	*MHCP* will use the JAGS 2014 data to establish a baseline for all patients (De Jonge et al., 2014). We will monitor this measure annually using Confidential Case Mix Reports and anticipate a 10% reduction in ED visits for patients enrolled in *MHCP*.	**ED Visits in Reporting Period:** 242 **ED Visits per Patient-Year:** 1.65 ED visits in CRISP are counted whether the patient is admitted or not, hence this number is higher than for only-ED visits. CRISP data structure does not lend itself to identifying which ED visits and admissions are part of the same episode.
Readmissions	All Cause 30-day Readmits (see HSCRC specs)	CRISP 15.37% (from HSCRC-Maryland all cause, all ages Aug 2018 rolling 12 months; from website) 17.8% national all-cause 30 day readmission for 65+ (Kaiser)	*MHCP* will use a mixture of the JAGS 2014 data and the IAH Medicare Demonstration data to establish a baseline for all patients. We will monitor this measure using PAU reports and anticipate a 20% reduction in 30 day readmissions for MHCP.	**Readmissions:** 14.5% of all admissions within the MHCP population in the reporting period were readmissions NOTE: The MHCP population is an older (avg age 81), sicker cohort than HSCRC reported readmission statistic and Kaiser reference.
Prevention Quality Index	(see HSCRC specifications)	PQI Patient Level Reports According to	*MHCP* will use a mixture of the JAGS 2014 data and the IAH Medicare Demonstration data to	**Utilizations Related to Ambulatory Sensitive Condition (ASC):** 162.5 per 1,000 patients or 10.2%

		the Dartmouth Atlas, the PQI rate for Baltimore, MD is 51.3 per 1000 admissions or 5.1%	establish a baseline for all patients. We will monitor this measure using PQI reports.	Our rate of ASC-related utilization may be higher due to (1) our patients are the sickest of the sick (2) the impact of our program increases with the length of patient enrollment. Many of the patients from FY18 are first-year enrollees.
Patient experience	% rating 9 or 10	HCAHPS	*MHCP* will use a mixture of the JAGS 2014 data and experience at MedStar Washington Hospital Center to establish a baseline for all patients. We will monitor this measure using survey tool similar to HCAPHS scores and seek an average score of 3 out of 4 or higher.	**Patient Rating:** 100% of respondents would recommend MHCP to friends and family.

Table 1: Core Process Measures

Measure	**Definition**	**Source**	***MHCP* Approach**	***MHCP* Year 3 Report**
Use of Encounter Notification Alerts	% of inpatient discharges that result in an Encounter Notification System alert going to a physician	CRISP	*MHCP* is a home-based care delivery model. The *MHCP* team is fully registered with CRISP and receives 100% of the alerts from CRISP.	**< 100%** CRISP support turnaround is quite slow. On occasions when we report delayed or missing notifications, it takes approximately 2 weeks for follow-up.
Completion of health risk assessments	% High utilizers with <u>completed</u> Health Risk Assessments	Hospital, Partnership, Collaboration	*MHCP* screens for eligibility for the MHCP program using a geriatrics health risk assessment at intake. As all patients are screened, we expect 100% completion.	**100%** We screened all new patients to the Baltimore practice during year 3.
Established longitudinal care plan	% of High Utilizers Patients with completed care	Hospital, Partnership, Collaboration	*MHCP* care teams currently develop and document care plans, goals of care, and advanced directives within clinical notes. *MHCP* will continue this method and expect	**100%** MHCP care teams transitioned to a new EHR in November 2016 (MedConnect) as part of a MedStar system initiative. All clinical notes, advanced directives, key family contacts, and goals of care are

			100% completion.	completed in EMR.
Shared Care Profile	% of patients with care plans with data shared through HIE in Care Profile	CRISP	The *MHCP* model does not lend itself to this measure. The MHCP approach is designed so that all providers on the MHCP team are informed by a single EHR.	**N/A** The MHCP approach is designed so that all providers on the MHCP team are informed and updated from a single EHR.
Portion of target pop. with contact from assigned care manager	% of High Utilizers Patients with contact with an assigned care manger	Hospital, Partnership, Collaboration	The MHCP approach is designed so that each member of the care team works together serves as a collective group of care managers for each patient enrolled in *MHCP*. By definition, this measure will be 100% for all patients at all time points.	**N/A** Weekly patient care team meetings are ongoing. All new patients, unstable patients, inpatients, patients in SAR, and deaths are discussed each week by the MHCP team. Care partners (such as MedStar VNA & Home-delivery pharmacy) join the weekly team meeting as needed.

Table 2: Program Specific Measures

Measure	Definition	Source	*MHCP* Approach	*MHCP* Year 3 Report
F/U visit completed within 2 days of hospital discharge or ED visit	Follow-up visit by care team within 2 days of hospital discharge or ED visit	*MHCP* program data	*MHCP* will use programmatic data to monitor time to follow-up visits. We will monitor this measure annually and anticipate over 50% compliance with this measure.	**87%** 94% of patients admitted in the year-long period were seen within 2 days of discharge.
Medication reconciliation completed within 2 days after transition from hospital or ED	Medication reconciliation by care team within 2 days of hospital discharge or ED visit	*MHCP* program data	*MHCP* will use programmatic data to record and monitor time to medication reconciliation. We will monitor this measure annually and anticipate over 50% compliance with this measure	**87%** Medication reconciliation is a standard procedure during post-discharge visits and documented in EHR clinical note. Patients admitted in the 6-month period had their discharge medications reconciled with ongoing medications.
Cause of Program Exit	Death, NH placement, Moved, Discharged from Program, Left Program,	*MHCP* program data	*MHCP* will use programmatic data to record cause of program exit. We will monitor this measure annually and conduct	Death is the leading cause of program exit. Of the 72 patients exited in Year 3, 39 patients died. 20 moved out of catchment or went to long-term care. 12 withdrew.

	Other		analyses for patterns and trends.	
Death Data	Location, Code Status, Hospice Involved	*MHCP* program data	*MHCP* will use programmatic data to record cause of program exit. We will monitor this measure annually and conduct analyses for patterns and trends.	Of the patients that died, 70% died at home, 5% in the hospital, and 20% in inpatient hospice. 90% used hospice service and had DNR code status.
Provider Satisfaction / Retention	Overall job satisfaction; Percent of Professional / Admin Staff who leave each year	*MHCP* program data	*MHCP* will use programmatic data to record how many professional and administrative staff leaves *MHCP* each year. We will monitor this measure annually as a percentage, and conduct analyses for patterns and trends.	95% favorable responses on employee engagement survey (not including physicians); 15- 19 points higher than internal and national benchmarks

<u>Full Description of Budget Expense Category</u>

The greatest strength and expense for this intervention is our caring and skilled staff. Each team can manage ~ 300-350 frail elders within a 30-minute driving radius. These expert mobile teams do whatever it takes to help elders and their caregivers live with dignity in their home.

- **Workforce:** Includes physicians, nurse practitioners, social workers, care coordinators, office triage nurse, team manager, and community outreach liaison. Also includes data analytic support for cost evaluation, clinical outcomes, and patient experience. This expense remains lower than budgeted because patient growth volumes are at full capacity for current clinical team. An “temporary” outreach liaison position was piloted in October 2017 to raised awareness and establish referral networks.
- **IT/Technologies:** Includes laptops with broadband air cards, cell phones, IT server configuration & ongoing support to access patient information (includes internal MedStar data & external CRISP alerts) within HIPPA standards, EMR specialization for population health management (i.e. Time tracking for CCM & CPO billing), improved data management systems for synthesis of patient outcomes & costs, “black bag” medical supplies such as pulse oximeter, stethoscope, B/P cuffs. These expenses are recognized at FY’18 year-end report.
- **Other Implementation Activities:** These include personnel regulatory compliance expenses (licenses, malpractice, etc), safety support (Security escort service, roadside assistance, etc), community outreach expenses to cultivate relationships with key partners, emergency patient care needs (non-covered medications and supplies), and workflow improvements to enhance provider efficiency. Again, these expenses were lower than budgeted due to lower patient volume. MHCP implemented a large marketing effort in February 2018 to boost new patient enrollment and increase community awareness**.**
- **Indirect Costs:** includes a portion of support personnel, office space renovation, and office supplies, postage, printing, etc. These expenses are lower than budgeted due to encumbered capital renovation. MHCP is working with MedStar executives and HSCRC on how to best recognize this expense and meet standard accounting guidelines.

- **Other reimbursements:** Includes fee-for service health insurance billing & Independence at Home Medicare Demonstration Shared savings. These additional revenues have been subtracted off the budget category expenses based on the % of enrollees who are enrolled in other 'shared savings' or Medicare Advantage programs**.**

Time line of Program implementation

Jan-March 2016

- Built financial and organizational infrastructure and recruited key clinical and support staff

April-June 2016

- Lead physician started work in April, 2016
- Triage nurse, care coordinator, and nurse practitioner hired
- Procured clinician laptops and negotiated information services (IS) support
- Began outreach and relationship-building efforts with community partners

July-September 2016

- Began official patient care services
- 2nd Physician and Operations Manager were hired
- Intensive outreach efforts with emergency rooms, assisted living facilities, and primary care providers
- Built and refined tracking tools through various MedStar Clinical Systems
- Secured space for office on MedStar Good Samaritan campus
- Identified and expanded community partnerships and resources

October- December 2016

- Identified and expanded community partnerships and resources
- Social worker hired in October- Team #1 fully staffed
- Transitioned to a new Electronic Health Record (Med Connect) in November, 2016
- Ongoing coordination with CRISP on need for accurate real-time alerts
- Developed plans for total cost & outcomes evaluation with external health economist group
- Ongoing dialogue with HSCRC and CRISP on data available to MedStar health system

January- March 2017

- Switched to incremental weekly census uploads to CRISP to better capture utilization events
- Collaborated with MedStar hospital leadership to recruit patients from HSCRC high-utilizers list.

April-June 2017

- Renovation completed of new office space
- Consulted MedStar Institute for Innovation (MI2) on patient recruitment
- Created new Outreach liaison position with incentives for meeting practice growth targets
- Collaborated with MedStar marketing team to deploy online advertising and track metrics
- Began collaboration with JEN/Westat Associates on study of the impact of house calls on patient outcomes and overall costs

July-December 2017

- Hired outreach liaison for community outreach and patient recruitment
- Created toolkit for scheduling outreach, screening patients, and documenting referral sources
- Submitted IRB approval to conduct study on patient outcomes and overall costs; CMS claims data will be purchased using HSCRC funding for outcomes data purposes.
- Worked with CRISP and MedStar hospitals to improve the consistency of real-time utilization alerts
- Mobilized MedStar marketing for name 'rebranding' to MedStar House Call Program & targeted marketing campaign in January, 2018. Includes radio advertisement, direct postcard mailing, social media, and online search optimization.
- Continued grass-roots efforts to build referral networks with care managers, discharge planners, and primary care providers with high risk patients.
- Started Year 6 of the Medicare Independence at Home shared savings demonstration in January 2018

January - June 2018

- Hired new operations manager for DC practice
- Embarked on project to transition population tracking functionality into the EMR
- Initiated negotiations with Senior living facilities in the area to provide medical services

July 2018 – June 2019

- Developed structured care referral alerts in EMR to prompt awareness and referral among primary care providers
- MedStar leadership promoted Dr. Meena Seshamani to newly created role as Vice President of Clinical Care Transformation for MedStar health system. MedStar House Call Program placed organizationally under her leadership as a population health priority to reduce total costs of care.
- Ongoing work with MDPCP-CTO embedded care managers to identify and refer high cost, frail elders to MedStar House Call Program. Using HSCRC attribution lists and other patient stratification tools to compel hand-off.
- Continuing outreach work with community partners and neighborhoods to build trust and credibility.

Program Partners

A visual of collaborative partners:

For the Baltimore team, partners include:

- **Transportation**: Action in Maturity, MedStar Transport
- **Home PT/OT, Skilled Nursing & Hospice**: MedStar VNA, Hopkins Home Care, Gilchrist Hospice, VITA Hospice
- **Sub specialists & inpatient rehabs**: all the local sub-acute facilities
- **Hospital & ER care**: all local hospitals where our patients might land. Notified via CRISP alerts. Our physicians provide inpatient care at MedStar Good Samaritan Hospital.
- **Labs & Radiology**: Providers draw labs-in home and use MedStar Good Samaritan lab to process. Initially the team tried LabCorp, but results weren't easily available to clinicians. Mobile radiology services through Mobile Medical
- **Delivery of Medication and Equipment**: through local Medicare agencies. MedStar Pharmacy at Good Samaritan hospital provides home delivery and customized blister packaging for patients who opt for that service. Otherwise, any local pharmacy partners with our clinicians and receives electronic prescriptions.
- **Social Services & Legal**: triaged through MedStar House Call social worker to various community agencies. Guardianship attorney (on contract by MedStar) engaged when appropriate for patient/family situation.
- **Housing:** Over 100 group homes and senior assisted living facilities were identified in our catchment. Our staff has cultivated relationships with many of them to foster awareness and referrals. They routinely offer ice cream socials, participate in health fairs, and community events. Stadium Place, St. Mary's Roland View, Walker Mews, & Kirkwood House are a few of the senior residence facilities that are strong partners.

<u>Challenges and Recommendations:</u>

- Slower patient enrollment than anticipated. We learned that trusted relationships and reputation matter. Patients and families are reluctant to change medical providers despite hardship in getting to a doctor's office and no wrap-around services. That is beginning to change as word of mouth and strong reputation take hold. HSCRC funds are needed to support operational ramp-up to full patient census capacity.
- Some confusion in the local community on how to transfers patients/families to appropriate health care.
- Delay in finding adequate office space and implementing a modest capital renovation.
- HSCRC hospital attribution model does not match how patients receive primary care in various community settings. We are working with hospital partners and primary care practices using EMR and data stratification tools to enroll appropriate patients in MedStar House Call Program.
- We are currently unable to access total cost data by patient over time to calculate total costs savings.

Recommendations:

- Outreach—We will continue an outreach plan to ERs, Senior living facilities, and the family caregiver community. This has shown slow but steady success in the past three years.
- We will adjust growth plan and staffing for FY20 to realistic patient volume targets.
- Continued work with our health system, hospitals, and partners to build smooth structured workflows that easily identify and hand-off potential high cost patients to effective interventions such as MHCP.
- An opportunity to present our results from our health economist evaluation (JEN/Westat) on total costs of care. MHCP used HSCRC funds to purchase Medicare claims data for this purpose since DUA amendment with HSCRC seemed prohibitive. Although this involves more time and expense, we feel this analysis important to state policymakers and health systems. Additionally, these findings will add to the growing body of evidence alongside our work in Medicare Independence at Home shared savings demonstration.