Regional Partnership for Health System Transformation

Regional Transformation Plan – Final Report

Due: December 7, 2015

Regional Partner: University of Maryland Upper Chesapeake Health/ Union Hospital of Cecil County Regional Partnership

***Maryland's Vision for Transformation*:** Transform Maryland's health care system to be highly reliable, highly efficient, and patient-centered. HSCRC and DHMH envision a health care system in which multi-disciplinary teams can work with high need/high-resource patients to manage chronic conditions in order to improve outcomes, lower costs, and enhance patient experience. Through aligned collaboration at the regional and state levels, the state and regional partnerships can work together to improve the health and well-being of the population.

***Regional Partnerships*:** In order to accelerate effective implementation, Maryland needs to develop regional partnerships that can collaborate on analytics, target services based on patient and population needs, and plan and develop care coordination and population health improvement approaches. The Regional Partnerships for Health System Transformation are a critical part of the state's approach to foster this collaboration. As referenced in the RFP, the Regional Partnership plan will describe, in detail, the proposed delivery and financing model, the infrastructure and staffing/workforce that will support the model, the target outcomes for reducing utilization/costs and improving quality and the health of the populations targeted, and effective strategies to continuously improve overall population health in the region. In order to fulfill healthcare savings commitments by Maryland to CMS, the initial target populations have been identified as high utilizers such as Medicare patients with multiple chronic conditions and high resource use, frail elders with support requirements, and dual eligibles with high resource needs.

The Care Coordination Workgroup identified these populations as most likely to yield the biggest gains from the Regional Partnerships' efforts. The Workgroup also recommended the development of state-level integrated care coordination resources and in some areas recommended standardization and collaboration. The Care Coordination Workgroup's final report can be found at: http://www.hscrc.state.md.us/documents/md-maphs/wg-meet/cc/Care-Coordination-Work-Group-Final-Report-2015-05-06.pdf.

The Regional Partnership grants will culminate in the development of a regional transformation plan due in December 2015. Given the importance of regional collaboration to meet the goals of the new model, multi-year strategic plans for improving care coordination, chronic care, and provider alignment are required of all Maryland hospitals.

To achieve transformation on a regional and state-level, the following nine domains have been developed. These domains are meant to be a guide to the Regional Partnerships and other Maryland hospitals and serve as action steps during the planning process.

Nine Transformation Domains

1. Clearly articulate the goals, strategies, and outcomes that will be pursued and measured

2. Establish formal relationships through legal, policy, and governance structures to support delivery and financial objectives
3. Understand and leverage currently available data and analytic resources
4. Identify needs and contribute to the development of risk stratification levels, heath risk assessments, care profiles and care plans
5. Establish care coordination people, tools, processes, and technology
6. Align physicians and other community-based providers
7. Support the transformation with organizational effectiveness tools
8. Develop new care delivery models
9. Create a financial sustainability plan

As you utilize this template and develop your Regional Transformation Plan, please refer to the "Transformation Framework" as a reference guide.

Regional Transformation Plan Template

Goals, Strategies and Outcomes

Articulate the goals, strategies and outcomes that will be pursued and measured by the regional partnership.

The purpose of the University of Maryland Upper Chesapeake Health (UMUCH) and Union Hospital of Cecil County (UHCC) Regional Partnership (RP) is to address the medical and social needs of high utilizer patients and those with multiple chronic conditions. It is difficult to divorce the medical needs from the social needs of these patients, therefore this plan calls for the development and expansion of post-acute clinics and the creation of a team of care givers that work with patients in the community. Ultimately, patients will gain confidence controlling their conditions and receive supplemental support in conjunction with the practice of primary care that prevents future, expensive, and potentially avoidable utilization.

Strategy 1: Post-discharge Clinics (Comprehensive Care Center at UMUCH / Chronic Disease Center at UHCC)
The two hospital systems in the partnership will both operate a post-discharge clinic (PDC) that addresses multiple needs. These clinics could be best described as a hybrid high risk clinic, transitional clinic, and chronic disease management clinic. Each location is or will be staffed with a physician or nurse practitioner plus nurse care managers and social workers. The purpose is to provide an intensive evaluation of the patient's needs immediately after discharge and to provide the needed medical and social support plan and follow-up. The engagement with the patient is expected to last approximately 30-45 days but may vary depending on patient need and response to treatment. The RP will target Medicare and dual eligible patients while hospitalized and refer them to the clinic to begin a new process of care.

Strategy 2: Community-based Care Management
The RP will jointly develop a program of community-based care management (CBCM) that includes four teams of care givers working in conjunction with the respective post-discharge clinic and the primary care providers in the community. Teams will be comprised of a registered nurse with a social worker and multiple community health workers. Patients that meet the criteria, high utilization or chronically ill,

will be referred to the PDC so that they can be entered into a new patient registry. A clinical team will then determine if the patient requires intensive services through the PDC or can be referred directly to the CBCM. Those working through the PDC will be transitioned to the CBCM after becoming medically stable. The goal is to extend the total length of time that these patients receive medical and care management/coordination support for up to 90 days through the integration of these two strategies. Those not requiring intense follow-up in the PDC will be engaged directly into the CBCM program with in home follow-up occurring on a scheduled basis. The teams will be supported by take-home telemonitoring equipment and the ability to conduct a Skype consultation with the provider in the PDC as needed.

Strategy 3: Information Technology (CRISP Connectivity & Data Warehouse)
The RP recognizes the need to integrate health care providers and supporting organizations assisting common patients to create a more patient-centered and efficient system of care. To that end, the partnership will work closely with CRISP to foster improved ambulatory data sharing, including government organizations such as the Offices on Aging and the Health Departments, to provide a more detailed picture of the patient engagement with providers. UMUCH is already piloting the Prompt reports and has connected ambulatory practices such as Cardiology and the Diabetes Center such that providers may view this activity as well.

Additionally, CRISP and the RP have agreed to a multi-year pilot of a CRISP-hosted Care Management Platform that would allow health system and non-health system resources to document care plans and follow-up on patients in a common format that would be easily viewed by other providers in the community.

Ultimately, a lengthier engagement with the patient that combines medical treatment, care management, care coordination and patient education will impact the future use of the emergency department and limit hospital admissions and readmissions.

Describe the target population that will be monitored and measured, including the number of people and geographical location.

The Regional Partnership will target Medicare and Dual-eligible patients with either high rates of hospital utilization and/or multiple chronic conditions. Health Services Cost Review Commission (HSCRC) data presented to the RP indicates that there are approximately 8,300 (2,490 + 5,853 in the table below) of these high risk patients in Cecil and Harford Counties. This population accounted for more than $373M in hospital charges during the year. The initial focus on the program will require interacting with these patients after they have "identified" themselves by coming back to the hospital. The RP also recognizes that a process for engaging these patients before they come to the hospital will be necessary and will allow providers in the community to refer patients to the program, even if they have not yet met the hospital utilization threshold. These patients may be described as moderate or rising risk patients that could benefit from these new interventions. Ongoing monitoring of CRISP reported data including Encounter Notification Services and PaTH Reports will help the RP determine if the criteria for the program should be expanded or a new geographic focus should be created.

County Name		High Utilizers	Patients w/ 5 or More Chronic Conditions

	# of Unique Patients	#	%	Total Charges	Average Charges	#	%	Total Charges	Average Charges
Cecil	25,481	615	2%	$ 38,034,742	$ 61,845	1,653	6%	$ 52,185,114	$ 31,570
Harford	55,888	1,875	3%	$ 129,706,077	$ 69,177	4,200	8%	$ 153,459,978	$ 36,538
Two County Total	81,369	2,490	0	167,740,818	67,366	5,853	0	205,645,092	35,135

Describe specific metrics that will be used to measure progress including patient satisfaction, quality, outcomes metrics, process metrics and cost metrics. Describe how the selected metrics draw from or relate to the State of Maryland's requirements under the new model.

The program will target the below metrics, consistent with the state transformation framework. This includes outcome measures that capture both utilization and cost (charges) data, as well as process measures that indicate improvement within the new delivery model. The RP will also develop a patient survey to monitor the satisfaction of patients with the CBCM program.

Type	Name	Description
Outcome	Readmissions	30-day all-cause readmissions
Outcome	Revisits	30-day ED revisits
Outcome	Observation	30-day readmission to observation
Outcome	SNF Readmissions	48 hour readmission from SNF
Outcome	Hospital Charges	Reduction in Hospital Charges for High Risk patients
Outcome	Hospital Utilization	90 day Pre/Post intervention utilization
Process	PDC/CBCM Consults	Percent of patients requiring meeting criteria referred to PDC/CBCM
Process	CRISP Utilization	Increase in ENS Subscribers in the Community
Process	Care Management	Percent of patients with Care Plan in new CRISP Care Management platform
Process	EMS Transport	Monitor EMS call data by specific address
Process	Referral Management	Percent of patients referred to PDC
Satisfaction	Program Satisfaction	New patient survey

Describe the regional partnership's current performance (target population) against the stated metrics.

UMUCH and UHCC have made strides with regard to these metrics in the past two years. The UMUCH PDC called the Comprehensive Care Center (CCC) has tracked 90 and 180 day pre/post intervention data since January of 2015 with impressive results. Nearly 60% of patients receiving care management and coordination support have no further hospital utilization during the 90 days post enrollment (n=612 patients). Observed reductions in total inpatient/ observation cases, inpatient days, and ED visits are also noted for Medicare patients working with the CCC. The below table shows the percent reduction in utilization in the 90 or 180 days after intervention compared to the rate in the months leading up to the referral.

UMUCH CCC Hospital Utilization Reduction (Medicare Only n=152)			
90 Day Pre/Post		**180 Day Pre/Post**	
(51%)	**IP/ Obs Cases**	**(47%)**	**IP/ Obs Cases**
(48%)	**Patient Days**	**(41%)**	**Patient Days**
(42%)	**ED Visits**	**(44%)**	**ED Visits**

The RP has developed a plan that compliments this early success and aims to extend the interventions for patients that *did* have further hospital utilization by continuing the care management process, in-home, for up to 90 days.

Additional momentum has been achieved more broadly with regard to Potentially Avoidable Utilization at the hospital organizations. The below table displays year over year reduction of UMUCH.

	UMUCH PAU Reduction vs. Prior Fiscal Year	**FY 15**	**FY 16 ***
1	Inter-Hospital Readmissions	(12.5%)	(19.5%)
2	Potentially Preventable Admissions	(6.2%)	(16.0%)
3	MHAC Cases	(26.5%)	(2.5%)
	Total	**(10%)**	**(16.5%)**

Define the data collection and analytics capabilities that will be used to measure goals and outcomes.
The RP will develop robust program evaluation capabilities via a RP-wide data warehouse. In addition to the metric outlined above, this will allow RP end users to answer the following questions:

- Are the right patients being referred?

- What are the common conditions and social issues being addressed?
- How is the PDC & CBCM interacting with patients (telephone, in-home, office encounter)?

The Data Warehouse capabilities will expand in a phased approach to incorporate data from the hospitals, ambulatory practices, skilled nursing facilities, Home Health agencies and CRISP. A phased approach will integrated these data sources and develop end-user reporting tools for more real-time analysis. Each phase will bring additional value to the program and set the stage for quality reporting that is consistent with payment incentive programs such as the Physician Quality Reporting System (PQRS) or Medicare Shared Savings Program (MSSP). Further description is available in the appendix through the UMUCH / UHCC Regional Partnership Proposed Business Intelligence (BI) Solution Report.

List the major areas of focus for year one. (For the completion of this plan, if various areas of focus require different descriptions, please identify each area under the following sections of the plan.)

There are important initiatives that will take place in year one of this program.

1- Hiring and training of the Nurse Care Managers and Community Health Workers. These important resources are in high demand and may take some time to fully hire the teams. Both Hospital organizations have resources that can be maneuvered to support early implementation of the CBCM. The RP has developed job descriptions and has engaged several organizations capability of providing timing training increasing the "speed to market" of the program.
2- Refinement of patient flow processes. The RP has developed referral guidelines and criteria for matriculation from the PDC to the CBCM. We will evaluate the flow of patients and information to tweak the processes as expected with new programs.
3- Phase I & Phase II of the BI Solution Work Plan. The BI work plan is a phased approach for reporting and analytics that includes the development of the data hosting, architecture and initial set of end user reporting packages in year one.
4- Deployment of the CRISP Mirth Care Management Platform. The RP will identify end users for the pilot program and work with the CRISP team to integrate systems and provide training.

Formal Relationships and Governance

List the participants of the regional partnership such as hospitals, physicians, nursing homes, post-acute facilities, behavioral health providers, community-based organizations, etc. Specify names and titles where possible.

The following government and community organizations have participated in the planning process. These groups have committed to ongoing quarterly meetings to evaluate the program and make recommendations about future refinements.
-Cecil County Health Department (Health Officer)
-Harford County Health Department (Health Officer, Deputy Health Officer, Care Coordination Plus Program Representative)
-Cecil County Service and Transit (Administrative Director, Long Term Care Chief)
-Harford County Office of Aging (Director, Program Manager)

-CRISP (VP, Director of Integration)
-Lorien Health (COO, Site Administrator)
-Healthy Harford (Executive Director)
-Heart to Hart Transportation (VP& COO)
-Harford County EMS (Medical Director)
-Amedysis Home Health (Area VP, Director)
-West Cecil Health/ Beacon Health (President)
-Med Chi (Director for Private Practice)
-Union Hospital of Cecil County (Chief Medical Officer, VP of Provider Enterprise, VP IT, Director of Care Coordination, Community Benefits Coordinator)
-Behavioral Health Collaborative (Executive Director)
-University of Maryland Upper Chesapeake Health (VP Population Health, Director of Comprehensive Care Center, Director of Community Health, Medical Director of Palliative Care/ Chair Medical Executive Committee, VP IT)
-Patient and Family Advisory Councils (UMUCH & UHCC) twice annual focus groups.

The members of the planning committee have been enthusiastically engaged in the process and attendance for each meeting has been high.

Describe the governance structure or process through which decisions will be made for the regional partnership. List the participants of the structure/process.

UMUCH and UHCC are finalizing a Memo of Understanding (MOU) that will govern the use of HSCRC hospital rates and other funding for this program. The MOU outlines the responsibilities of each organization for maintaining foundational elements of the program, such as the PDC. The hospital partners have elected to pursue an MOU as the best means for providing a balance of structure and flexibility in the early years of the partnership. UMUCH and UHCC also considered that a much more robust governance structure would be required if the organizations choose to pursue a Medicare Accountable Care program such as the Shared Saving Program. As a result, the MOU provides the structure needed for today without limiting options for governance in the future.

A steering committee comprised of at least four clinical and administrative representatives from each hospital organization will meet at least quarterly to review the defined metrics, work plans and approve future budgets. An operating committee consisting of members of the RP planning process, including the health departments, hospitals and CRISP will continue to meet on a monthly basis during the ramp up phase and to manage the day-to-day processes. The CBCM RN and CHW teams will be employed by Healthy Harford, which will expand its geographic reach into Cecil County with a new "Doing Business As (DBA)" name, likely to be Healthy Cecil. Healthy Harford will increase the size of its Board to include UHCC membership and the Cecil County Health Officer. Healthy Harford is a separate 501(c) (3) organization started in 1993 governed by local members of the business community, government agencies including the Health Department, and UMUCH. Earlier Healthy Harford hired its first ever Executive Director with funding support provided by UMUCH. Healthy Harford provides leadership by working across systems and with community partners to develop, support, and implement effective strategies to improve public health.

Areas of focus include: healthy lifestyles and resources, community health partnerships with the Local Health Improvement Coalitions (LHIC) and Access to Care Navigation.

Identify the types of decisions that will be made by the regional partnership.

The Steering Committee (UMUCH/ UHCC) will be responsible for making final decisions pertaining to budgets and funding. Program expansion or compression decisions as necessitated by funding availability will also be made by this committee. The two organizations have already agreed to utilize Healthy Harford as the mechanism for "hosting" the CBCM. Any changes to this structure would come from the steering committee. This committee will also oversee the use of funds associated with the BI Solutions Development, including changes to scope or phasing approaches.

An operating committee will make daily decisions about patient prioritization, CBCM team deployment, process changes and refinements that drive improvement within the identified metrics. This group will help with data governance in terms of data definitions between organizations and among local and state partners.

Subcommittee of the operating committee may be created to address specific or temporary issues. For example, a smaller group may be identified to work with the local community college to help create training programs or externships for CHWs or Care Managers.

Describe the patient consent process for the purpose of sharing data among regional partnership members.

Patients will have the opportunity to opt out of data sharing consistent with the current CRISP process. Patients will be notified via the Notice of Privacy Practices (NOPP) document that their data will be made available to CRISP and that the members within the RP will use this information to foster a more coordinated approach to care. Patients may opt out of this data sharing at any point in the process and the RP will exclude the individual from patient panels that drive ENS and other Reports. The RP and CRISP will develop a new process for the care management program during the pilot implementation phase.

Describe the processes that will be used by the regional partnership improved care and the MOUs or other agreements that will be used to facilitate the legal and appropriate sharing of care plans, alerts and other data as described in the process.

Each of the participating organizations will be required to execute the CRISP Participation and Direct Agreement. The RP has extended the offer for one CHW to be placed within the respective Health Departments and Offices of Aging. A Memo of Understanding will be executed with each organization outlining the expectations of the RP and the hosting organizations. This will be executed at the time in which the resource is hired and trained.

Attach the list of HIPAA compliance rules that will be implemented by the regional partnership.

(See Attached Appendix)

Data and Analytics

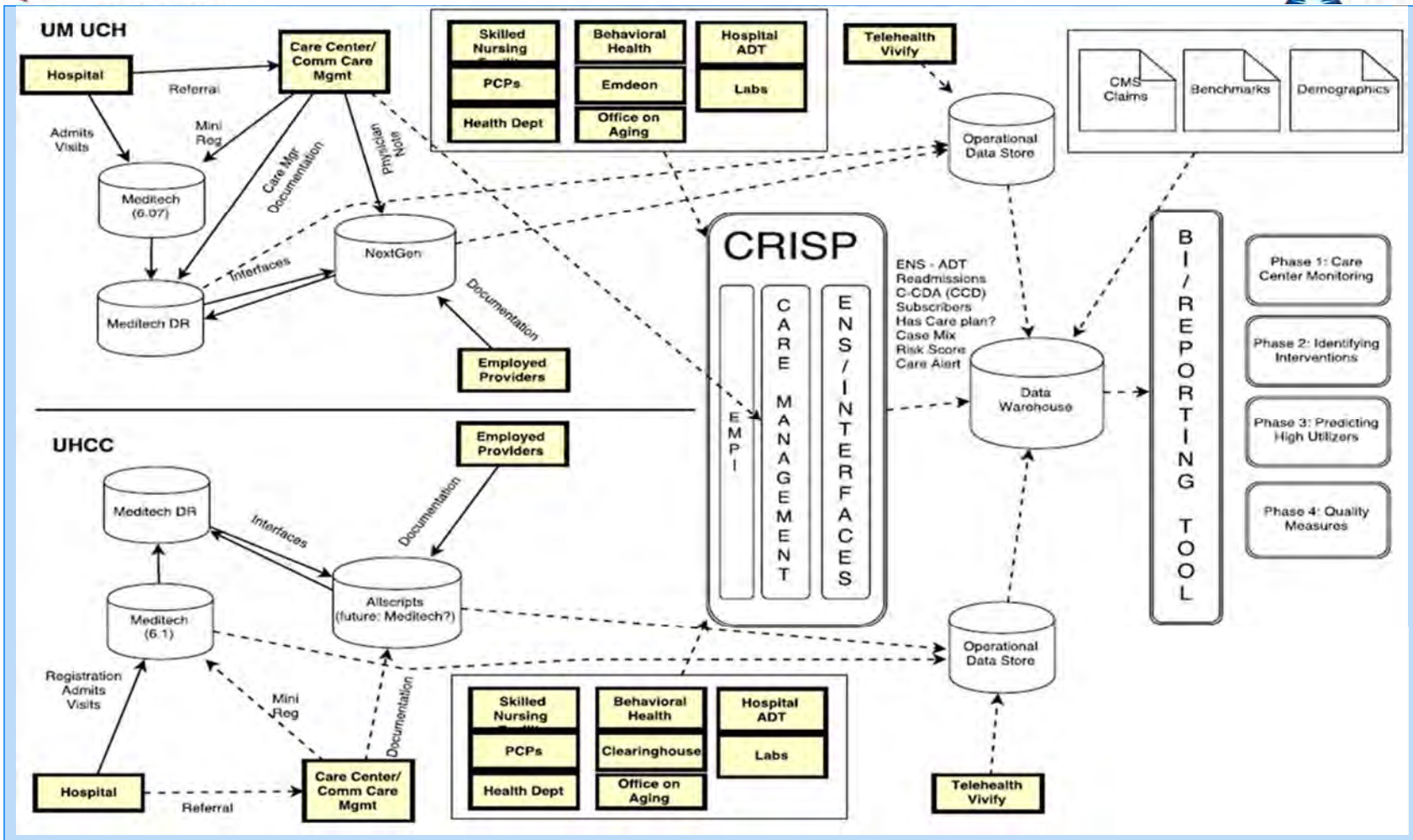
Define the data collection and analytics capabilities that will be used to measure goals and outcomes, including specific metrics and measures.

UMUCH and UHCC will develop shared data analytics capabilities to support this regional partnership. The planning process including the development of a Business Intelligence strategic plan that aggregates data from a variety of stakeholders along the continuum of care enabling more efficient care and better understanding of patient need.

Providing actionable data to drive better outcomes will require three main components: gathering data, transforming and storing data, and delivering the actionable information to end users. Many BI or Data Warehouse (DW) projects start with the first component and attempt to gather as much data as possible and then figure out what to do with it. This can result in a bloated, over budget, and ultimately unsuccessful project. Since the goal of the solution is to provide actionable data, the project components will be addressed in reverse order to help answer specific questions about the high risk patients.

For the BI platform to deliver actionable data, the source data must be transformed and stored in a data structure that is optimal for data retrieval. Generally, this is accomplished by implementing a data warehouse or group of data marts that use a dimensional data model (star or snowflake schema). The dimensional data includes both fact tables (for key measures) and related dimension tables (for grouping and filtering). The proposed solution implements a data warehouse stored in a relational database and will use an Extract, Transform, and Load (ETL) tool to transform and load the data. Based on existing RP expertise, current systems, and suitability, the proposed solution uses Microsoft SQL Server as the data warehouse platform and Microsoft SQL Server Integration Services (SSIS) as the ETL tool.

The source data will originate in multiple internal and external source systems. Data will be selectively loaded based on current and future reporting requirements. The data sources will include RP operational systems as well as external data, most notably CRISP data feeds and payer claims files when available.



Describe with specificity the regional partnership's plan for use of CRISP data.

CRISP will help the UMUCH/UHCC Regional Partnership and implement infrastructure for care coordination programs developed within the Health Services Cost Review Commission's Hospitals for Health System Transformation and subsequent care transformation, quality improvement, and cost reduction initiatives. The RP and CRISP will work jointly to meet the objects in each of the core categories listed below:

1- Community Provider Connectivity. UMUCH/ UHCC RP will prioritize a list of key non-hospital providers and work with CRISP to integrate them into the Health Information Exchange. CRISP is connecting ambulatory practices, long-term care/post-acute facilities, local health departments, and other relevant community health providers in order to:
   - Easily understand where a patient has received care or has a treatment relationship with a non-hospital provider.
   - Achieve clinical document transfer from to the non-hospital provider to the CRISP clinical query portal for treatment decisions at the point of care.

2- Reporting and Analytics. CRISP Reporting Services provides information to hospitals and provider organizations to facilitate outcome measurement, strategic planning, and care coordination. CRISP will continue to enhance available reports and the RP will provide feedback regarding these offerings.

3- Alerts and notifications. These tools may take a variety of forms leveraging CRISP tools such as Encounter Notification Services (ENS) and other integration capabilities. CRISP and RP will review potential use cases for in-context alerts with the intention of piloting those applicable to RP provider sites. Examples of use cases include:
   - A notification that a care plan exists
   - Notification that a patient has had a recent hospitalization
   - Notification that a patient has a PCP subscribing to ENS alerts
   - Alert that a patient risk score has increased

4- Clinical Query Portal Enhancements. CRISP is improving the functionality of the existing Clinical Query Portal to include elements that are relevant to more coordinated care. The RP will identify existing care plans for target populations and indicate to CRISP the source system of the documents. Examples of this improved functionality include:
   - A listing of current notification subscribers
   - A dedicated section that lists care plans that have been provided to CRISP
   - A dedicated section that provides a care summary
   - A risk score derived from risk-stratified case mix data

5- Care Management Software. RP will provide feedback on care management software currently in use (or other market analysis on existing software in the community, if available). RP and CRISP will work jointly to develop appropriate strategies to expand community-wide use of care management software, potentially through interfaces with multiple vendors and/or provision of a standard product as needed.

6- Secure Texting. CRISP will implement a secure messaging solution that meets the requirements of the RP and foster improved communication among physicians and other care givers along the continuum of care.

Risk Stratification, Health Risk Assessments, Care Profiles and Care Plans

Describe any plans for use of risk stratification, HRAs, care profiles, or care plans. Describe how these draw from or complement the standardized models being developed.

Identifying patients and understanding the drivers of their health care utilization are vital components of this RP. Additional data reviewed during the planning process indicated that patients that frequently utilized the hospital were likely to have at least one of the following conditions; diabetes, hypertension and depression, with many patients having all three. Integrating and reviewing data from multiple sources will be critical to segment patients and target interventions likely to be beneficial.

The RP will track risk by multiple methods and partner with CRISP to deliver a health system agnostic care management program that can also be used by participants in the community, and view by those with CRISP access.

For risk stratification, include the types of patients, risk levels, data sources, accountabilities (who is accountable to do what?)

The UMUCH/ UHCC Regional Partnership will extend the time that high risk patients receive care management support and access to medical care. High Risk patients will be defined as patients with five or more ED visits or three or more admissions during the year. Also, patients with multiple chronic conditions will also be identified as High Risk. The hospitals in the partnership will continue to use a modified version of the LACE score to determine high risk patients outside of the volume thresholds or chronic condition criteria. The Lace algorithm scores Length of Stay (L), acuity (A), co-morbidities (C), and ED visits (E) within the previous six months and is auto calculated using the Meditech Electronic Medical Record System that both hospital systems utilize. The RP will also monitor the CRISP Query Portal for any calculation based on case-mix data as this capability becomes available. The information will be reviewed at the time of the patient referral to the PDC and will assist in the clinical decision to engage the patient in the PDC or refer them directly to the CBCM teams for ongoing care management and coordination.

It is still a matter of debate if any risk tool can positively predict the risk of future hospitalization. The RP will continue to use the LACE score and the high risk volume thresholds at the macro level to capture the most likely population of patients. This methodology relies on previous health care activity as an indicator for future need. The development of analytic capabilities, as part of this program described in the "Data and Analytics" section, will help us develop a more focused assessment of patient need and risk within the identified population in the future. The RP will deploy a Database Administrator and two Program Coordinators to track patient activity through CRISP and other sources to potentially trigger a response by the CBCM resources. Indications of risk level will also be recorded in the CRISP-hosted Care Management platform that will ultimately be viewable by any stakeholder with CRISP access.

For HRAs, include the types of screenings, who is accountable for completing, and where information is recorded.

The UMUC/ UHCC Regional Partnership is a true collaboration with other key providers and support services in the community. During the planning process it became clear that certain organizations were bound to complete initial and ongoing assessments using a prescribed format to ensure that funding would be sustained. The Health Departments, Offices of Aging, Skilled Nursing Facilities and Home Health agencies all used a different intake format to capture data required for reimbursement. As a result, the RP tabled discussion of a common risk assessment tool and focused on sharing information with CRISP that would be helpful for making clinical decisions and coordinating care. The Health Departments and Offices of Aging have agreed to attempt to share at least Admission/Discharge Transfer (ADT) data from their respective systems and will consider sending monthly excel spreadsheets to CRISP indicating which patients are actively engaged with their agency.

For care profiles and/or care plans, include the key elements that will be included, the systems through which they will be accessible, the people who will have access. Standardized care profiles are anticipated to be developed by the state-level integrated are coordination infrastructure.

One of the major goals of the RP is to extend the time that patients are receiving care management and coordination assistance during their vulnerable post-discharge time. As a result, the RP will deploy a care management program in conjunction with CRISP that gives key stakeholders in the community the ability to contribute to a single patient's care plan. Those not contributing to the care plan will be able to access the most up-to-date version through CRISP access. The RP envisions that the PDC, CBCM teams, Health Departments and Offices of Aging will have "read/write" access to the Mirth Care Management platform during the pilot phase. Standard elements of CRISP-hosted Mirth Care system include:

- **Assigned Care Givers**
- **Patient Conditions**
- **Identifying Social Concerns**
- **Treatment Goals & Progress Trending**
- **Documentation of outreach including in-person visits and telephone calls**

Identify the training plan for any new tool identified in this section.

The RP has agreed to pilot the CRISP-hosted care management platform, Mirth Care. A training and implementation plan will be mutually developed in conjunction with the RP, CRISP and the technology vendor. The Memo of Understanding dictates that the training and support will be complete by the end of March, 2016.

Care Coordination

Describe any new care coordination capabilities that will be deployed by the regional partnership.

The Regional Partnership Care Coordination Model is a person-centered, multi-disciplinary model of care. The model was designed to be comprehensive, use resources effectively, develop targeted initiatives and leverage community-based resources through partnerships.

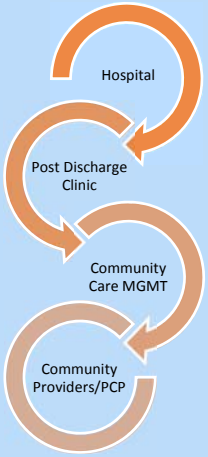
- New Care Coordination capabilities include the development/expansion of the Post-discharge Clinics (Comprehensive Care Center at UMUCH / Chronic Disease Center at UHCC). The purpose of the clinics is to provide an intensive assessment and monitoring of the patient's needs immediately after discharge from the emergency department or inpatient units, develop a comprehensive medical and social support treatment plan, and provide follow-up.
- Community-based Care Teams - The RP will jointly develop a program of community-based care management teams (CBCM). The CBCM will serve as the bridge between the post-discharge clinic, primary care physicians and community providers. The goal is to extend the total length of time that patients receive care management and coordination with the goal of reducing readmission. The teams will be supported by take-home telemonitoring equipment and have the ability to conduct a Skype consultation with the clinical coordinator and/or physician as needed.
- Community Health Workers will be embedded into four community partner agencies: Harford County Office on Aging, Cecil County Office on Aging, Harford County Health Department and Cecil County Health Department. The goal is to extend the reach of the treatment network beyond the hospital setting, strengthening the community partnerships and leveraging the treatment services already available in the community.
- CRISP Connectivity and the use of Mirth Care Management Platform. The RP recognizes the need to integrate health care providers and supporting organizations assisting common patients to create a more patient-centered and efficient system of care. The RP will work with community partners to foster improved ambulatory data sharing and provide real-time access to support patients.
- The RP will establish an initiative with the Harford County Department of Emergency Services/911 to develop a better coordinated system of care for the identification and follow up with citizens in the community who are vulnerable and utilize the 911/Emergency Medical System frequently. A similar partnership with Cecil County will also be explored.

Identify the types of patients that will be eligible for care coordination and how they will be identified and by whom.

High Risk patients will be defined as patients with five or more ED visits or three or more admissions during the year will be eligible for care coordination. High risk patients may also include those with multiple chronic conditions, with Diabetes, Hypertension and Depression among the most commonly occurring combination of conditions for high utilizing patients at both hospital organizations. The patients will be identified by the nurse case managers in the emergency department. The hospitals will use a modified version of the LACE Risk score to determine high risk patients outside of the volume thresholds or chronic condition criteria.

Define accountability of each person in the care coordination process.

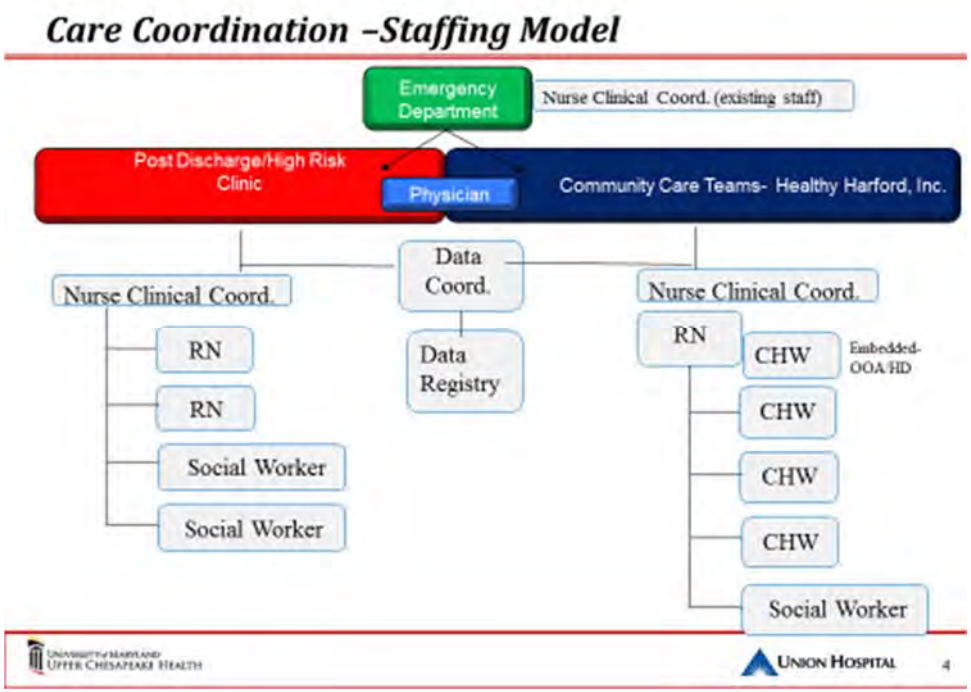
In order for care coordination to be effective all professionals along the treatment continuum need to collaborate and coordinate the patient's care. Effective coordination of a patient's health care services is a key component of high quality and efficient care.

Care Coordination Model	Patient Encounter	Responsible Persons	Accountability Role
	Hospital	Nurse Navigator	Patient assessment, determine risk stratification, patient referral to RP Care Coordination (either PDC or CCT).
	Post Discharge Clinic (Comprehensive Care Center/Chronic Disease Center)	Physician/ Nurse Practitioner	Oversight of patient treatment, medication management, coordination of care between specialty physicians/emergency department, illness education, support and leadership of PDC/CCT for clinical decision-making. Coordinated treatment plan with patient's ambulatory providers.
		Clinical Coordinator	Leadership and oversight of the PDC, case collaboration for high need patients, weekly coordination with ED Nurse Care Manager, CBCM Clinical Coordinator and Physician.
		RN	Comprehensive patient assessment, establish treatment care plan & goals, monitor, evaluate the treatment plan and determine transition to CBCM and other community providers.
		Social Worker	Resource/barrier identification, advocacy, service coordination, counseling and monitoring.
	Community-based Care Management	Clinical Coordinator	Leadership and oversight of the CCT, case collaboration for high need patients, coordination with ED/ Nurse Care Manager, PDC Clinical Coordinator and Physician.
		RN	Comprehensive patient assessment, establish treatment care plan & goals, monitor, evaluate the treatment plan and determine transition to community supports.
		Social Worker	Resource/barrier identification, advocacy, service coordination, and monitoring.
		Community Health Worker	Community outreach, motivational support, health screenings/monitoring, coaching, referrals, transportation, completing forms, follow up with PCP, document in CRISP/Mirth CM platform.
	Community Providers	Community Health Worker (Aging, Health Dept.)	Community outreach, program monitoring, health coaching, utilize EMR/CRISP. Increase access to preventative and chronic illness management - teach/monitor educational programs such as Stanford Self-Management Model.

	CRISP Connectivity	Data Coordinator & Data Registry	Monitor patients' goals and CRISP Reports. Support operations of data warehouse/care management platform.

Describe staffing models, if applicable.

The RP transformation plan calls for the expansion/development of Post–Discharge (high risk) Clinics, the creation of multi-disciplinary Community-based Care Management Teams in both Cecil and Harford Counties, Data Coordinator and Data Registry.



- Post-Discharge/High Risk Clinics located in both Cecil and Harford County will be staffed by a physician or nurse practitioner, nurse case manager and social worker. The UMUCH Comprehensive Care Clinic is currently operational with a full complement of staff. The clinic at UHCC is currently being developed for early 2016 implementation.

- The Community-based Care Management will be operated by Healthy Harford, Inc. Healthy Harford is a private, non-profit agency located in Bel Air. The CBCM staff will be hired and supervised by the Executive Director of Healthy Harford. The CBCM will be

comprised of a nurse clinical coordinator (who will provide clinical oversight and supervision), and four (4) community outreach teams. Two outreach teams will include one (1) nurse, four (4) community health workers. The other two CBCM teams will include one (1) nurse, three (3) community health workers, and one (1) social worker. The teams will provide coverage in both Harford and Cecil County – initially with 2 teams located in Harford, 1 located in Cecil and 1 "bridge" team working between Harford/Cecil (along the Susquehanna River). Four of the community health workers will be embedded in the community and located at the Harford/Cecil Office on Aging Departments and in the Harford/Cecil Health Departments. These workers will be co-supervised by their respective departmental supervisors and a CBCM nurse.

- Data Coordinator – A patient care/data coordinator will be hired to monitor patients' treatment history, goals, care plans, and CRISP utilization data. The data coordinator will function in the role as the "air-traffic controller".

- Data Registry Support – A resource will be hired to manage the data warehouse and provide technical support.

Describe any patient engagement techniques that will be deployed.

Care Coordination is successful by having a patient-centered, holistic approach. It is well recognized that patients who are actively engaged in their healthcare decision-making process have better outcomes. Patient engagement techniques will be implemented through a dual approach: staff training and direct patient interactions.

Staff Training: Staff who work in the Post Discharge/High Risk clinics and on the CBCM Teams will be trained in Motivational Interviewing and Therapeutic Practices.

- Motivational interviewing (MI) is a person-centered and goal-oriented approach that includes asking the patient open ended questions, using reflective listening and summarizing. MI helps a person explore what matters most with care and identify reasons for making a change.
- Therapeutic Practices have been identified as being fundamental to forming a therapeutic relationship. Skills utilized in establishing a therapeutic relationship are attuning, wondering, following and holding (Koloroutis & Trout, 2012). The goal is to engage with patients, ask meaningful questions, convey non-judgmental listening and employ a holistic approach. These skills can be learned, practiced and integrated so that every patient and every encounter is meaningful.

Direct Patient Interactions:

- Patients will be encouraged to participate in shared decision making about their health care and treatment. Patient-centered decision making is one that is based on empathetic, partnership-based exchange of information and discussion. The process of interacting with patients to make informed and value-based decisions about their health care treatment options, expected outcomes, and possible consequences. Patients will be encouraged to enroll, engage and actively participate in their care. When patients participate in decision making and understand what they need to do, they are more likely to follow through with the course of treatment.

- Linkages to supportive health and wellness programs in the community are key to engaging the patient into an ongoing support system (outside of the hospital walls). Education and chronic disease management programs located in the community (such as the Office on Aging Senior Care Program, Community Senior Centers or Health Department Hospital Outreach Program) provide an active approach to reduce chronic illness flair-ups and increase the likelihood of following treatment goals.

Physician Alignment

Describe the methods by which physician alignment will be created.

The RP has developed a care delivery model that compliments primary care providers in the community by assisting high risk patients through their most vulnerable time, often post discharge. The PDC completes temporary, but intensive, evaluation of medical and social needs and completes care management, education and coordination activities. Patients that meet criteria will be transitioned to the CBCM teams for ongoing care management while the patient's medical care is transitioned back to the primary care office. In the event that patient does not have a relationship with a primary care provider, a referral will be completed and the CBCM will follow-up to ensure that the appointment has been scheduled and kept.

There are multiple opportunities for Primary Care providers to achieve additional income in population health via transitional appointment billing codes and the new Chronic Disease Management codes. This new set of interventions of the RP will not compete with the Primary Care office for this revenue. The PDC will not bill the transitional code for any patient with an existing Primary Care Provider. Additionally, the CBCM teams will be employed by Healthy Harford with the care management and coordination activity being provided as a community benefit at no cost to the patient. The care plan and ongoing care management of the patient will support the Primary Care provider's ability to bill for this new revenue at no cost to the physician. The RP envisions working collaboratively with providers in the community to care for Medicare Patients in a high quality, low cost manner that is consistent with alternative payment models such as the Medicare Shared Savings Program. If the new programs are having the desired results, the RP will consider developing a more formal organization to participate in an ACO.

Describe any new processes, procedures and accountabilities that will be used to connect community physicians, behavioral health and other providers in the regional partnership and the supporting tools, technologies and data that will assist provides in the activities associated with improved care, cost containment, quality and satisfaction.

At UMUCH the team at the PDC (Comprehensive Care Center) have worked closely communicating with Primary Care practices in the community. The PDC team coordinates the outstanding test results, makes specialty physician and social program referrals and records gaps in care for immediate follow-up. The team has been so successful at managing the short-term needs of the patients, that some Primary Care physicians are referring patients to the clinic before the patient need rises to the level of a hospitalization. Likewise, UHCC has successfully

coordinated post-discharge follow-up care with providers in the community. The goal with this new program is to foster tighter communication among the PDC, CBCM, and Primary Care through CRISP tools such as the Care Management Platform and secure texting. The RP will continue to advocate on behalf of CRISP in the region to have practices integrate their EMRs (sharing ADT Feeds) and consume the data by subscribing to the ENS. Data from the new data warehouse as well as CRISP PaTH reports will be shared with providers on a regular schedule.

With regard to Behavioral Health, the two hospital organizations have developed a joint venture (JV) to plan and develop new mental health programs across the two counties. The Executive Director of this JV is one of the leads for the RP planning process and has guided the discussion on integrating these services. As a result, the CBCM teams will receive mental health first aid or other BH training to identify any patient needs and inform care givers. Future BH plans, such as community crisis teams, can be easily integrated into the new RP workflows as they develop. Additionally, both UMUCH and UHCC have partnered with Father Martin's Ashley to provide intensive outpatient services for substance abuse in offices located in close proximity to the PDCs.

Describe any new value-based payment models that will be employed in the regional partnerships

The RP will expand the use of a telemedicine program within the Lorien Skilled Nursing Facilities (SNFs). Further detail is described in the "New Care Delivery Model" section below.

Organizational Effectiveness Tools

Attach the implementation plan for each major area of focus (with timelines and task accountabilities)
(See Attached Work Plans)

Describe the continuous improvement methods that will be used by the regional partnership.

The RP determined that the most optimal performance improvement methodology for the program is Deming's Plan-Do-Study-Act (PDSA) cycle. This requires limited training by the various participants in the RP while providing a discipline for seeks data, determining the significance and making required changes to the process to ensure efficiencies.
UMUCH has also deployed a Performance Improvement Methodology, which has resulted in Daily Activities for Success Huddles (DASH), allowing stakeholder groups to review current performance against operational metrics and make note of any process changes that may be needed to assist in the achievement of these goals and the state-wide metrics that support the current Medicare Waiver. The RP will also explore conducting Performance Improvement seminars for members of the care community by the Vice President of Quality at UMUCH. This may also be completed in conjunction with MedChi to allow physicians to receive Continuing Medical Education credits through the PI-CME program. (See Attached Description)

Attach a copy of the metrics dashboard that will be used to manage performance over time with an explanation of associated processes that will be used to monitor and improved performance.

(See Attached)

Describe the work that will be done to affect a patient-centered culture.

The RP will engage with Patient and Family Advisory Council at UMUCH and UHCC to seek feedback on the intervention and enact refinements that lead to higher satisfaction, engagement and confidence with the plan of care. The RP is scheduled to present to this forum at their next meeting on January 14, 2016. In addition, the CBCM teams will be trained on Motivational Interviewing so that patients and care givers can create a care plan with mutually agreed upon goals. Time tables for in-person and telephonic follow-up will also be mutually agreed upon by the patient and the CBCM team.

New Care Delivery Models

Describe any new delivery models that will be used to support the care coordination outcomes. (For instance, tele-visits, behavioral health integration or home monitoring.)

The RP will deploy several new delivery models to positively impact the measures identified in Section I. Both hospital organizations have successfully deployed telehealth programs in the past year and this partnership aims to expand on this foundation. UHCC has deployed a home monitoring technology called Vivify that records critical patient values such as blood pressure and weight and relays this information electronically to a central database. Care Managers are alerted if the provider-set values are outside of an acceptable range, and outreach is conducted to determine if the patient needs additional follow-up. This RP would expand the use of this program into Harford County by acquiring additional Vivify kits, which are reusable, to extend the patient surveillance capability while managing only when the critical need has been identified by the monitoring system. We will attempt to work with CRISP to connect the Vivify data to future reporting capabilities and or the CRISP hosted Care Management Platform.

UMUCH recently completed a pilot program with Lorien-Bel Air that enables the Skilled Nursing Team to connect with UMUCH ED providers via a telehealth system named Lifebot. This program boasts jointly developed patient use criteria, clinical policies and medication carts in Lorien that contain the same drugs and IV solutions as in the hospital ED. The telehealth technology allows physicians to evaluate SNF patients by controlling three cameras and viewing vital sign information including EKGs. Treatment changes are carried out by the Lorien team to prevent a transfer to the hospital. This pilot has resulted in a 34% reduction in 30-day readmissions and prevented 42 patients from being transferred to the hospital via EMS. This program will be expanded into the two remaining Lorien facilities in Harford County in 2016 in

part because the hospital has agreed to compensate ED providers the equivalent of a level 5 visit. Under the current models, this use of telemedicine is not reimbursable by the Centers for Medicare and Medicaid Services (CMS), creating a conflict in the minds of the ED team for patient prioritization between virtual patients and those physically present in the ED. With this payment obstacle removed, the program should further reduce readmissions and ED visits among SNF patients. Further expansion of this program will be considered by the Operating Committee.

The new CBCM teams will also be conducting in-home visits to compensate for patient transportation issues, and conducting evaluations about hazards in the home. These teams will be armed with computer tablets that allow for a Skype call back to the PDC for evaluation or consultation if needed. Strict criteria for use of this function have been developed to address only non-emergent issues such as wound checks, patient rashes, and the like, with the option to bring the patient to the PDC always in play. This has the potential to limit future use of the Emergency Department.

In addition to the Skype-enabled tablets, the CHW teams will also receive Behavioral Health (BH) training, including Mental Health First Aid. As UMUCH and UHCC already are partners in a Behavioral Health Collaborative, any new BH programs such as crisis response teams or embedded BH Social Workers would be integrated into this new model.

Identify how the regional partnership will identify patients, new processes, new technology and sharing of information.

The RP values the aggregation and exchange of information that empowers key stakeholders to interact with patients before they arrive at a crisis point. To that end, the RP has agreed to share data from new ambulatory sources with CRISP as well as develop a community data warehouse to identify patients with rising risk. Key personnel from the RP will have access to the Data Warehouse reports, though administrative settings will limit available data by user group. The participants will also be encouraged to participate with CRISP in both sharing (ADT) and receiving (ENS/PaTH/Prompt) data.

Process improvements will be discussed in the operating committee meetings and supported by data. Additionally, new technology that supports patient outreach, education, or monitoring will be evaluated periodically by the operating committee with the goal to scale this program without increasing expensive human resources. The goal is to deploy tools that allow the PDC and CBCM to manage by exception-only when the rise in risk is identified.

Financial Sustainability Plan

Describe the financial sustainability plan for implementation of these models.

The RP recognizes the need for ongoing sustainability of this new model of care. This model values elongated engagement with the patient in a PDC with matriculation to a community-based care team. The entire program will work in concert with the patient's existing providers or

make connections where providers are not present. In short, the model emphasizes non-hospital interventions that are more patient-friendly and less costly in the delivery system.

The HSCRC data provided to the RP indicates a combined 2,490 high utilizer patients and another 5,853 patients with five or more chronic conditions. In total this population accounted for more than $373 million in hospital charges. Based on preliminary data from the UMUCH PDC, the RP believes that there is potential for a significant reduction in hospital charges for this population. The PDC at UMUCH reviews utilization data for referred patients at 90 and 180 days post intervention intervals. For the initial 612 patients, where the proper run out time period is available, nearly six of 10 had no further hospital admissions or ED visits in the 90 days post period. At the 180 day milestone, the number reduces to four of ten, still a strong reduction in hospital utilization. This new set of interventions aims to impact the post hospital utilization within the 90 day window and stop the degradation of performance moving from 90 days to 180 days.

The CBCM teams will manage 100 patients per team for 60 day periods allowing for approximately 2,400 patients to receive this service. The combined capacity of the PDCs is also estimated to be approximately 2,400 patients with current staffing plans. Assuming that the RP will have more opportunity to engage a portion of the High Utilizers and those with multiple chronic conditions, and calculating a modest reduction of 25% of hospital activity, there is a potential for a reduction of between $13 and $19.5M annually once the program is at full capacity. (Note: The RP estimates that a greater percentage of high utilizers can be identified initially through their use of the ED and hospital. The RP will work over time to increase the percentage of patients with multiple chronic conditions that are engaged as the risk stratification programs evolve)

Conservative Evaluation

	High Utilizers				Patients w/ 5 or More Chronic Conditions			
County Name	#	%	Total Charges	Average Charges	#	%	Total Charges	Average Charges
Two County Total	2,490	0	167,740,818	67,366	5,853	0	205,645,092	35,135
							$ 35,134.99	
Perent of Poulation in Program	30%				20%			
Count of Patients	747		$ 50,322,245		1,171		$ 41,129,018	
Annual Reduction in Hospital Volume	15%		$ 7,548,337		15%		$ 6,169,353	
Reduction in Charges			$ 13,717,690					

Moderate Evaluation

County Name	High Utilizers				Patients w/ 5 or More Chronic Conditions			
	#	%	Total Charges	Average Charges	#	%	Total Charges	Average Charges
Two County Total	2,490	0	167,740,818	67,366	5,853	0	205,645,092	35,135
							$ 35,134.99	
Perent of Poulation in Program	40%				30%			
Count of Patients	996		$ 67,096,327		1,756		$ 61,693,528	
Annual Reduction in Hospital Volume	15%		$ 10,064,449		15%		$ 9,254,029	
Reduction in Charges			$ 19,318,478					

UMUCH estimates that each ED visit avoided saves $128 of variable cost at the hospital and another $445 dollars for each patient day. There are immediate cost savings that will accrue to the hospital organizations to allow for continued funding of this program. Additional dollars are at risk in the form of incentives and penalties within the all-payer model that make this utilization reduction more critical.

Describe the specific financial arrangements that will incent provider participation.

Primary Care Providers will be financially incentivized to participate by having the ability to bill Medicare for both the transitional visit code and the chronic disease management code in accordance with the regulations. The PDC and CBCM team will not bill for this service but will provide the needed care planning as a community benefit within Healthy Harford (DBA Health Cecil).

Additionally, the UMUCH ED providers will be reimbursed directly from the hospital for accepting the telemedicine call from the Lorien facilities in Harford County. Future expansion of this program and the payment model will be evaluated and determined during calendar year 2016.

Population Health Improvement Plan

Provide detailed description of strategies to improve the health of the entire region over the long term, beyond just the target populations of new care delivery models. Describe how this plan aligns with the state's vision, including how delivery model concepts will contribute and align with the improvement plan, as well as how it aligns with priorities and action plans of the Local Health Improvement Coalitions in the region.

The Regional Partnership (RP) reached consensus to develop services based on the growing health needs in the region. The purpose is to improve the overall health of the populations in Cecil and Harford County while reducing health disparities. Through a unified approach, the RP will target specific populations to include people who are frequently hospitalized, have multiple chronic conditions, and in some cases, no primary care provider association. It is also recognized that people with rising health risks present as a vulnerable population and will also be served through the newly established collaborative treatment pathways.

Significant discussions occurred with the Regional Partnership workgroup recognizing that in addition to addressing the needs of high risk patients, the integration of prevention principles into the care delivery system through evidence based practice programming will be critical to the overall success, health and well-being of the regional community. To that end, the Local Health Improvement Coalitions (LHIC) is an integral mechanism for improving population health in the community and reaching people who are "outside" of the targeted high risk population.

The State of Maryland DHMH and Health Services Cost Review Commission seek to transform the health care system to enhance patient care, improve population health and lower total costs. The vision is for health care systems to develop a comprehensive collaborative system which includes traditional hospital providers and engaging multi-disciplinary teams, including community service and faith-based providers. The RP has identified an innovative and collaborative health model that aligns with the State's overall improvement plan. To meet State transformation goals, five population health strategies have been identified:

Strategies	Alignment of Population Health Goals and Resources
Value Based Reimbursement	➢ Establishing Union Hospital and University of Maryland Upper Chesapeake Health as a full continuum of services across acuity levels for regional populations to improve patient care. An MOU is being finalized UMUCH and UHCC are finalizing a Memo of Understanding (MOU) that will govern the use of HSCRC hospital rates and other funding for this program. The MOU outlines the responsibilities of each organization for maintaining foundational elements of the program.
Seamless Continuum of Care	➢ Expansion/Creation of Post-Acute (high risk) clinics at Union Hospital and University of Maryland Upper Chesapeake Health as the central points of intake for complex, high risk patients. ➢ Creation of Community-based Care Management Teams to support seamless patient "handoffs" from the Post-acute/High Risk Clinics to reduce readmissions and complications. The Community Care Teams, comprised of multi-disciplinary staff- nursing, social workers, and community health workers, will work across county lines for integrated care, provide intensive monitoring in the community, and linkages to community-based providers (e.g. Health Department, Office on Aging Programs, faith-based programs).

	➢ Expansion of emergency diversion practices into a long-term care settings – Lorien Bel Air, a Skilled Nursing Facility, has deployed a telehealth process to allow for remote clinical decision making by the Emergency Department for patients at risk for readmission. ➢ Partnership with the Harford County Department of Emergency Services/911 to target high volume callers with linkages into the High Risk Clinics and subsequently to the Community Care Teams for intensive follow up.
Proactive and Systematic Patient Education	➢ Targeted approach through Healthy Harford/HealthLink and Cecil County Health Department to embed evidence-based chronic disease management programming; Stanford Stepping-Off Program into the community at county senior centers and at additional community locations. ➢ Primary care physicians will be educated about the new clinical pathways (use of high risk clinics and community care teams) as an alternative to sending patients to the emergency department.
Integrated, Comprehensive Health Information Technology with Real-time Accessibility	➢ CRISP-hosted Mirth Care Management Platform is critical in supporting the goal of shared (appropriate) patient information. Both hospital systems and selected community partners will be "senders" and "receivers" to aid in treatment planning and care management efforts. The local Health Department electronic medical records platform (Patagonia) will be linked to CRISP for additional patient data/coordination.
Community Partnerships for Collaboration	➢ The Local Health Improvement Coalitions (LHIC) will be used as the community-based framework. This framework consists of diverse partnerships between the hospitals, local service agencies, government and faith-based organization to address specific and general health needs in the community. The LHIC metrics will be used to measure health progress and overall community wellness.

In 2011, The State of Maryland Department of Health and Mental Hygiene (DHMH) launched the State Health Improvement Process (SHIP) to prioritize Maryland's health concerns. The goal of SHIP is to provide a framework for accountability, local action and public engagement to create and measure progress in Maryland's health. This framework is implemented at the local level through Local Health Improvement Coalitions (LHICs). The purpose of the LHIC is to improve the health of all residents with particular attention to health disparities. Both Cecil and Harford Counties have established priorities that include well-functioning workgroups and implementing Local Health Action Plans.

Specific metrics were developed by both counties to monitor the health and well-being in the region. Data collected by DHMH monitor the outcomes of the counties as compared to the State of Maryland.

The RP and LHIC led initiatives are now aligned to address complex medical and psychosocial issues such as environmental hazards, poverty, housing and other socioeconomic factors. Rising-risk patients have health factors that include multiple health conditions (e.g. obesity, smoking, high blood pressure, behavioral health issues, and psycho-social issues). Similarly, high-risk patients present with complex disease states (CHF, COPD, diabetes, behavioral health, etc.). The Cecil and Harford County LHIC provide a diverse leadership forum that seeks to find solutions to local health problems through assessment, planning, policy/programmatic development, education and assurance of quality health services.

Cecil & Harford County rank worse than the State average in key health measures . . .

Measure	Cecil	Harford	MD
Cancer death rate (per 100,000)	160.6	167.9	163.8
Adults who currently **smoke** (%)	18.0	16.9	16.4
Adolescents use **tobacco products** (%)	24.6	20.2	16.9
Adults who are a **healthy weight** (%)	31.6	35.3	35.8
Increased **physical activity** (%who are active > 150 min/week)	47.9	46.4	48.0
Suicide death rate (per 100,000)	10.2	10.7	9.0
Drug-induced death rate (per 100,000)	26.5	17.9	13.3
E.D. visit rate for **addictions** (per 100,000)	2165.7	1673.6	1591.3
Life expectancy (years)	77.2	79.5	79.6

Source: www.dhmh.maryland.gov/ship/

Local Health Improvement Coalition priorities include:

- Cecil County: 1) Prescription Drug Abuse; 2) Access to Mental/ Behavioral Health Treatment; 3) Substance Abuse Preventions; 4) Child Abuse Prevention; Childhood Obesity.
- Harford County: 1) Obesity Prevention; 2) Tobacco Use Prevention; 3) Behavioral Health

Data is critical in tracking the overall health and wellness of residents in the region and with specifically targeted populations. The RP will continue to meet as a group and collaborate with community partners through the LHIC. The goal is to evaluate our health priorities and the outcomes of the newly established model of care. The collective goal is to change the health care system in Cecil and Harford Counties to be patient-centered, well-coordinated and well-integrated into the community.

UNIVERSITY of MARYLAND
MEDICAL SYSTEM

STANDARDS

of

BUSINESS CONDUCT

UNIVERSITY of MARYLAND
MEDICAL SYSTEM

DEAR COLLEAGUE:

As Maryland's premier health care system, the University of Maryland Medical System, in partnership with the University of Maryland School of Medicine, has an obligation to set high standards for business integrity.

Our vision of serving Maryland includes:

- The highest quality patient care
- Service excellence
- Commitment to academic medicine by supporting:
  - Medical advancements and
  - The education of future health care professionals to work in the communities we serve
- All provided in a cost effective manner

The core values of the University of Maryland Medical System – Service, Respect, Excellence, Integrity, and Teamwork – guide our behaviors.

Our success depends on maintaining our reputation for providing high quality services and maintaining business integrity. The Standards of Business Conduct describe a set of shared principles upon which we can continue to build a reputation for excellence. These Standards apply to all aspects of our clinical and business operations and should serve as a guide for all employees, medical staff and contractors when providing services on behalf of our organization.

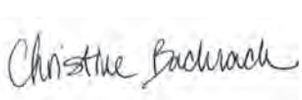
In today's highly regulated health care environment, it is important to foster a culture that encourages a strong understanding and commitment to regulatory compliance. To rise to this challenge, we must remain true to our principles even under internal or external pressure to do otherwise. There can be no shortcuts or special exceptions. We must never lose the confidence of our patients or their physicians by failing to provide high quality medical care – or of our business partners, our payors, or government officials by failing to conduct our business with integrity.

Whether in clinical operations, billing, finance, marketing or any other aspect of our business, each of us can make a positive contribution to our shared success. At the core of this effort is an obligation for all of us to accept and adhere to the principles outlined in the Standards of Business Conduct. Because no single set of business standards can address every situation, a number of other resources are available within the Medical System to provide assistance with specific questions or concerns. These include policies covering a variety of operational and regulatory topics as well as the Corporate Compliance Department – see Appendix A.

Please join us in embracing these Standards of Business Conduct as the foundation of a corporate culture based on integrity.

Robert A. Chrencik
President and CEO
University of Maryland Medical System

Lyle Sheldon
President and CEO
UM Upper Cheasapeake Health



Christine Bachrach
Chief Compliance Officer
University of Maryland Medical System

PURPOSE OF THE STANDARDS OF BUSINESS CONDUCT

The University of Maryland Medical System is committed to conducting business in compliance with all applicable federal, state and local laws and regulations and to acting, at all times, in conformance with the highest standards of business integrity. The Standards of Business Conduct are designed to help us accomplish these objectives by establishing a general framework for acting with integrity and accountability in accordance with a shared set of principles. They cannot, however, address every issue that may arise in the course of our business. There are many more focused policies and systems to address specific areas in greater detail. These policies should be consulted as a supplement to the standards.

The Medical System reserves the right to modify, revise or alter any policy, procedure or condition of employment at its sole discretion. The Standards of Business Conduct are not an employment contract. Unless otherwise prescribed by contract or state law, employment with The Medical System is at will and may be terminated by either the employee or Medical System at any time, for any reason or for no reason.

WHO IS COVERED

University of Maryland Medical System Corporation includes the following Affiliates:

University of Maryland Medical System Corporation and the following University of Maryland (UM) Affiliates by their dba names – legal names of all Affiliates are in Appendix B:

- University of Maryland Medical Center
- University of Maryland Medical Center Midtown Campus
- UM Rehabilitation and Orthopaedic Institute
- UM Baltimore Washington Medical Center
- UM Shore Medical Center at Easton
- UM Shore Medical Center at Chestertown
- UM Shore Medical Center at Dorchester
- UM Charles Regional Medical Center
- UM St Joseph Medical Center
- UM Upper Chesapeake Medical Center
- UM Harford Memorial Hospital
- Mt. Washington Pediatric Hospital

The standards apply to all employees of the University of Maryland Medical System Corporation and its Affiliates (collectively "Medical System"), as well as medical staff members, contractors and other professionals who provide health care and other services to or on behalf of the Medical System.

CONTENTS

OUR COMPLIANCE PROGRAM

The Medical System's Compliance Program is based on eight key elements.

Development of effective regulatory compliance policies and management controls. The policies are made available through each Affiliate in an electronic format.

Promotion of strong compliance governance function and "tone at the top" through a formal structure that promotes adherence to the Compliance Program. The Chief Compliance Officer ("CCO") reports to the Audit and Compliance Committee of the Board of Directors, which is responsible for oversight of the compliance program; the Executive Compliance Committee is responsible for approving the annual compliance plan and policies, and the Hospital/Affiliate Compliance Committees are responsible for the implementation of the Compliance Program.

Dissemination of policies to employees and contractors and development of appropriate training mechanisms to ensure that such policies are clearly understood.

Provision of opportunities for employees and contractors to ask questions or report suspected violations of policies or regulatory obligations without fear of retaliation and the prompt investigation of all credible reports of such violations.

Regular self-monitoring and independent review of the effectiveness of internal controls related to regulatory requirements and other potential risks.

Accountability for violation of policies or regulatory obligations (including those in supervisory positions who allow, or unreasonably fail to prevent, improper conduct).

Continuous improvement of the Compliance Program based on experience.

Assessment of compliance risks to assist in guiding the best use of compliance resources.

COMPLIANCE – A SHARED COMMITMENT

Compliance is a shared commitment among all Medical System employees, medical staff members, and contractors. The Medical System, through the board of directors and senior management, is responsible for setting standards of business conduct and for developing policies, procedures and systems to assist employees and contractors in understanding and meeting these standards. Employees and contractors are responsible for acting with integrity at all times and for upholding the standards and policies established by the Medical System.

Guidelines for employees

You should know the basic laws and regulations that apply to your job. If you have questions, ask a supervisor or other resources. You should also know and follow policies and procedures.

Each employee is expected to:

Comply with all laws and ethical standards. You will never be expected to violate the law or any ethical standard of your profession. If you ever feel pressure to do something with which you are uncomfortable or have any questions, seek guidance from the resource personnel listed in Appendix A.

Apply the Standards of Business Conduct. You are expected to read and understand these standards. Use good judgment and apply the standards every day in the course of your job. Questions about the standards or how they apply to you can be directed to your supervisor or resource personnel listed in Appendix A.

Know the law. These standards do not require you to be a legal expert. You are expected, however, to be familiar with the basic laws that apply to your specific job and level of responsibility. Pay close attention to all training information and policies. Do not be afraid to ask questions.

Be part of a team. Offer suggestions to improve management controls or make policies and systems easier to understand and use. Cooperate with the University of Maryland Medical System representatives on audits and internal investigations.

Report potential violations of law or policy. If you believe there is a potential violation of law or policy, bring the matter to the attention of your supervisor or other avenue under the Getting Answers section on the next page. Do not assume that senior management already knows about an issue.

Report exclusions and convictions. You must inform your supervisor and human resources department if you are convicted of a felony, have sanctions threatened or imposed against your professional license, or are informed by any governmental entity that you are no longer eligible to participate in federal or state reimbursement programs or contracts.

Special responsibilities of supervisors and managers.

Supervisors and managers have a special responsibility for compliance and integrity. As a supervisor or manager, you should ensure that all employees and contractors understand and apply the principles outlined in the Standards of Business Conduct and other policies. Never ask or expect an employee or other person to violate the rules at any time. Further, be clear in your verbal and written communications to avoid any inference of tolerating rule violations.

Be proactive. Ensure that employees and contractors are properly trained and understand their obligations under the standards. Ensure that policies and procedures are in place to promote compliance with regulatory standards.

Be receptive. Maintain an open-door policy for concerned employees. Make it clear that you are open to questions or concerns about compliance-related issues.

Be responsive. Take prompt and appropriate action when a suspected violation of law or policy is brought to your attention. Contact one of the resources in Appendix A.

Do not allow retaliation. Ensure that no one who reports a suspected violation of law or policy in good faith is subject to any retaliation.

Leadership requires that you set a personal example of integrity in all aspects of your job. It is up to you to set the right tone for the people who report to you.

CONSEQUENCES OF NONCOMPLIANCE

Failure to comply with the law and federal and state health care regulations could lead to serious consequences for you, your fellow employees, medical staff members, contractors, and the organization. These may include termination of employment, prison, personal or corporate fines, exclusion from Medicare and other health care programs, loss of credibility and respect by physicians and patients.

GETTING ANSWERS TO QUESTIONS OR REPORTING A POSSIBLE VIOLATION OF LAW OR POLICY

Open discussion of regulatory and policy issues without fear of reprisal is vital to the effectiveness of the Compliance Program. Ask questions about policies or practices that you do not understand and report suspected violations of law or policy to a supervisor or other appropriate person. Any of the following resources (see also Appendix A) may be used for this purpose.

Your supervisor or department manager

Many questions and problems can best be addressed at the department level. Your supervisor knows you and the issues in your workplace better than anyone else in the Medical System. If they do not have an answer, they have access to other resources.

The human resources department

If your question or concern involves a human resources or general workplace issue, contact your human resources department.

Hospital / Affiliate Compliance Officer

Each of the Medical System Affiliates has a Compliance Officer. Their contact information is included in Appendix A.

Corporate Compliance

Questions or concerns relating to health care or other regulatory issues should be brought to the attention of the Corporate Compliance Department by phone 410-328-3889 or by email (compliance@umm.edu).

Compliance Hotline

If you have not been able to resolve an issue through other channels or if you feel uncomfortable about raising an issue through your supervisor or other managers, you may call the toll-free Compliance Hotline at 877-300-3889 or go online to www.reportit.net to report a concern confidentially and anonymously and without fear of retaliation. The Compliance Hotline operates 24 hours a day, 7 days a week. It is staffed by an independent company with no other relationship to the Medical System. Your call will not be traced or recorded, and your anonymity will be protected up to the limits of the law if you wish to remain anonymous.

All reports received by the hotline will be investigated. If substantiated, appropriate corrective actions will be taken, including disciplinary action against employee(s) and/or other involved parties, changes to policies and systems, additional training, and/or disclosure of issues to appropriate governmental or other entities.

The hotline is intended to supplement, not replace, other channels for communicating questions and concerns within the Medical System. When you call the hotline, you will be given a report number which will allow you to follow up on your report. This will also allow Corporate Compliance to seek your help in answering questions while fully protecting your anonymity. Calling back or responding to the questions is entirely voluntary, but may assist in conducting a more effective investigation.

THE STANDARDS

Legal obligations

STANDARD: The Medical System will comply with federal, state and local laws and regulations that apply to our business.

You should know the basic laws and regulations that apply to your job. If you have questions, ask a supervisor or other resources. You should also know and follow policies and procedures.

The Medical System will not employ or contract with any person or entity that is ineligible to participate in federal health care programs.

Suspected violations of law or regulation must be promptly reported to a supervisor or other appropriate person (Appendix A).

Competitive pressure or "industry practice" is never a valid reason for violating company policy or regulatory standards.

Quality of care and treatment of patients

STANDARD: The Medical System will furnish high-quality medical care to patients safely and in accordance with professional standards. We will respect each patient's dignity and right to privacy of medical information.

Quality services - Furnishing high-quality medical care to patients is the primary goal of the Medical System. Services should be furnished in accordance with medical orders issued by a physician or another authorized health care professional based on the needs of each patient. Some examples of how services must be furnished:

- Medical services should be furnished skillfully, safely and in accordance with clinical policies and procedures, government regulations, and professional standards.
- Services should be medically appropriate for the patient.

- Only persons with appropriate training and professional credentials and licenses may furnish or supervise the delivery of medical care.
- No health care professional should ever furnish a service, or take any action, that would violate a professional code of ethics or practice act.

Treatment of Patients - All patients will be treated with respect and dignity. Patients will not be denied access to medical services at any Medical System hospital based on race, ethnicity, sex, religion, national origin, color, creed, age, mental disability, physical disability or other protected classification. The well-being of patients should be the focus of all employees, whether their roles involve direct patient care or other supportive functions. Some examples of ways you should demonstrate this focus include:

- Respond promptly and courteously to patients' questions and concerns.
- Provide adequate and accurate information to patients and their families in order to allow them to participate in treatment planning whenever appropriate and to make informed treatment decisions.
- Medical ethical issues may arise related to treatment provided to our patients. When confronted with such ethical concerns, you should voice your concerns through the proper mechanism. Each Medical System hospital has a mechanism for addressing medical ethical concerns.

Safe Patient Care - Safe care is essential to the well-being and recovery of patients. The Medical System will promote a corporate-wide safety culture.

- Buildings and space will be maintained in order to protect patients, visitors, and staff.
- Equipment used to furnish medical services should be safe, effective and in good working order at all times. Maintenance will be performed and documented in accordance with the manufacturer's instructions and contract requirements.

Clinical records - All clinical records should be accurate and complete.

Protection of patient health information - The Health Insurance Portability and Accountability Act (HIPAA) and Maryland laws set the standard for maintaining the confidentiality of patients' protected health information (PHI) whether oral, written, or electronic. All patients' medical and financial information must be treated as confidential. Only those who require specific patient information to furnish care, perform quality control activities, bill or collect charges for services, or furnish other administrative services (known as TPO – Treatment, Payment, and Operations) are permitted access to that PHI unless authorized by the patient. Any improper use or disclosure of PHI should be reported to a manager. The Health Information Technology for Economic and Clinical Health Act (HITECH) of 2009 requires certain improper uses and disclosures to be reported to the patient and the government.

Dispensing drugs and controlled substances - Federal and state governments regulate the use of controlled drugs and other pharmaceuticals, including orders, storage, administration and inventory. The loss, diversion, or misuse of any controlled substance must be reported immediately to a supervisor.

Clinical research - All research activities conducted at Medical System hospitals must be reviewed and approved in advance to ensure that research protocols have been reviewed, patients have been informed and have given consent to participate, and that systems are in place to prevent inappropriate billing or disclosure of confidential information.

Sales and marketing

STANDARD: The University of Maryland Medical System will market its services fairly and in accordance with federal and state laws and regulations. The Medical System will not offer or accept any kickback or other unlawful benefit for the purpose

of inducing the referral of patients or health care products or services.

Accuracy and integrity - All sales and marketing presentations and literature will fairly and accurately describe Medical System services. The Medical System will respect copyright and trademark rules when using materials published by others.

Fraud and abuse laws - Federal laws prohibit a health care provider from paying or receiving a kickback or other unlawful benefit to or from anyone for the referral of a patient or for the purchase of health care products or services. Such laws apply not only to physicians and other health care professionals, but also to all types of referral sources, such as hospitals, nursing homes, case managers, workers' compensation attorneys, and any other individuals in a position to influence referrals or purchases. They cover both:

- The offer or payment of a kickback to secure referrals.
- The request or receipt of an unlawful benefit in exchange for agreement to purchase a health care product or service from a particular vendor or contractor.

Kickbacks or unlawful benefits can take many forms besides cash, including excessive gifts and entertainment or items or services not at fair market value. Federal law also prohibits the use of gifts or other financial benefits to induce a Medicare patient to receive care at a Medical System Affiliate.

Antitrust and business competition - The Medical System will compete vigorously, but fairly, in the marketplace. Antitrust laws prohibit such activities as "unfair methods of competition" and agreements "in restraint of trade." Examples of conduct prohibited by these laws include: agreements to fix prices and collusion (including price sharing) with competitors and boycotts (such as of certain payors). Questions relating to antitrust should be directed to the Office of General Counsel (Appendix A).

Billing and coding

STANDARD: All claims for services must be fair, accurate, and conform to applicable regulatory and contractual requirements. Collecting the correct payment for the services provided is a fundamental part of the Medical System's business. Accordingly, care should be taken to properly code, bill, and collect only for services actually rendered and that are documented properly.

- Bills must be coded to accurately reflect the services rendered, as well as relevant diagnoses.
- Billing, coding and collection practices must conform to applicable regulatory requirements and commercial contract obligations.
- Coders must be trained and qualified to perform such functions.
- Overpayments must be promptly identified and returned to payors.
- Effective management controls will minimize the scope and frequency of billing errors.

If you discover an error or a suspected error in a claim or in any billing system, promptly alert your supervisor or another person (Appendix A).

Federal False Claims Act (FCA) - The federal False Claims Act (FCA) prohibits any entity from knowingly submitting false or fraudulent claims payable by the federal government and avoiding or decreasing an obligation to pay amounts to the federal government. "Knowingly" mean that a person (1) has actual knowledge; (2) acts in deliberate ignorance; or (3) acts in reckless disregard. Examples of the type of activity prohibited by the FCA include billing a federally funded program, such as Medicare or Medicaid, for services that were not provided, upcoding (i.e., billing for a highly reimbursed service in lieu of the service actually provided), or billing for medically unnecessary services. It also includes retaining overpayments received from a federally funded program.

Penalties for violation of the FCA include fines between $5,500 and $11,000 for each such claim submitted, regardless of the size of the false claim, plus up to three times the amount of the claim.

The FCA also protects individuals who report suspected fraud. Any person who lawfully reports information about actual or potential violations of the FCA, may not be retaliated against, demoted, suspended, threatened, or harassed for making such a report.

The FCA allows an individual to initiate a formal claim if he or she is the "original source" of the information. If any funds are recovered, a portion of the funds may be paid to the person who initiated the formal claim, at the discretion of a federal court. If a person wishes to file a claim regarding fraud or suspected fraud related to a health care payment directly with the government, he or she must first present a formal complaint, along with all material evidence relating to the alleged fraud, to the authorities at the U.S. Department of Justice. The authorities have sixty (60) days to investigate, during which time the complaint is kept confidential. Upon completion of the investigation, the government will decide either to pursue the case on its own or decline to proceed with the case.

Maryland Medicaid Fraud Law - Maryland has enacted a law similar to the federal False Claims Act that provides for criminal and civil remedies for the submission of false and fraudulent claims to the Medicaid program. Under the Maryland Medicaid Fraud law, it is a crime for an individual to knowingly and willfully attempt to defraud the Medicaid program in connection with the delivery of or payment for a health care service; or obtain or attempt to obtain by means of false representation anything of value in connection with the delivery of or payment for a health care service through the Medicaid Program.

Penalties for violating the Maryland Medicaid Fraud law include imprisonment, fines and civil penalties of up to three times the amount of the overpayment. Maryland law protects employees from retaliation if they, in good faith, disclose to a supervisor or board any potential violation of state or federal law.

Each Affiliate has a policy that explains the Federal and Maryland False Claims Acts in more detail.

Working environment

STANDARD: The Medical System strives to maintain a work environment where employees and contractors are treated fairly and with respect, where they can perform their jobs safely and effectively, and where they are encouraged to realize their full professional potential.

Additional information on the duties of each employee to promote these policies and programs is provided in each Affiliate's employee handbook.

Fair dealing - Each employee should endeavor to deal fairly with the Medical System's customers, suppliers, and employees. Employees and contractors are expected to deal fairly and honestly with the Medical System in recording hours worked, using Medical System property, seeking reimbursement for business-related expenses and all similar matters.

Diversity, discrimination and harassment - The Medical System values a diverse workforce and recognizes its contribution to creativity and business growth. The Medical System does not tolerate unlawful discrimination or harassment by or against its employees, contractors, patients, visitors or medical staff members. All employees and applicants for employment must be afforded equal employment opportunities without regard to race, ethnicity, sex, religion, national origin, color, creed, age, mental disability, physical disability or any other protected classification.

Disruptive behavior - Behavior that promotes excellent clinical care and superior patient satisfaction is expected. Verbal or physical behavior that could reasonably be expected to escalate the level of interpersonal tension in any situation is not tolerated.

Workplace violence - Physical violence or threat of violence is never acceptable. This includes abusive or aggressive behavior intended to threaten or intimidate another person.

Impairment related to the use of alcohol or drugs - Employees and contractors are expected to be free from the influence of alcohol or illegal drugs in the workplace. Further, impairment related to alcohol or any drug use (whether legal or illegal) while conducting Medical System business jeopardizes the health and safety of patients and other employees and contractors. Employees and contractors who suspect that a co-worker is intoxicated or under the influence of illegal drugs should notify a supervisor.

Professional practice acts - Employees and contractors are expected to conform to applicable state professional practice acts and professional codes of ethics at all times.

Health and safety - All employees and contractors are expected to be familiar with the potential hazards in their workplace and to comply with government regulations and policies relating to workplace safety. These policies and requirements include safety management plans, standard precautions for potentially infectious materials, storage and use of hazardous materials.

Handling and disposal of infectious materials - Federal and state laws regulate the handling and disposal of many infectious materials. Employees and contractors will properly dispose of blood and other bodily fluids, used needles and syringes, potentially toxic chemicals, and other materials.

Accounting and financial reporting

STANDARD: All accounting entries and financial reports must be prepared accurately and on a timely basis in accordance with the company's internal policies and procedures. External financial reports should fairly and accurately reflect the operations and financial condition of the Medical System.

Record keeping and management - The Medical System is required to prepare and maintain accounts, books and other records that fairly reflect the results of business operations. All transactions must be properly authorized, recorded in the period in which they were executed and properly documented. Each employee is expected to be familiar and comply with Medical System record retention policies that apply to documents (both paper and electronic) in his or her custody or control. Special care should be taken to preserve documents that are known to be subject to a government investigation, commercial litigation or audit.

Management controls - Employees and contractors are expected to assist in the development, execution and enforcement of effective internal controls to ensure that contracts, payments and other business transactions are properly authorized, conform to policies and procedures, and are recorded accurately.

Financial reports - All financial reports, accounting records, and other documents must accurately and clearly represent the relevant facts or the true nature of a transaction. Financial reports must be prepared in accordance with generally accepted accounting principles and legal requirements. Cost reports must be completed accurately and in accordance with established procedures and applicable regulations.

Management of Medical System assets

STANDARD: Medical System employees and contractors are expected to manage Medical System assets and other resources honestly and wisely. Medical System assets should be used for business purposes. Proper authorization in accordance with policies must be obtained prior to the commitment of Medical System funds or the disposition of other Medical System resources.

Physical assets - Employees have a duty to protect and not misuse Medical System property, assets, equipment and supplies. Missing property, as well as any unusual circumstances, should be reported to a supervisor.

Financial assets - Medical System funds may never be diverted for personal use, even temporarily, or used for any purpose that is not authorized and approved in accordance with policies.

Confidential or proprietary information - In addition to physical and financial assets, The University of Maryland Medical System assets also include certain intangible or "intellectual" property. This includes processes, inventions, pricing information, provider agreements, financial information, development plans and other information that has not been made public. No confidential or proprietary information should be disclosed to individuals within or outside the Medical System who do not need the information to perform their duties, unless expressly authorized by a supervisor or manager.

Use of information systems - The Medical System's information systems, including all hardware and software used to support such systems, should be used for business purposes. No software should be installed on Medical System computers or used for Medical System purposes without approval by Information Services and Technology.

Conflicts of interest (disclosures of financial relationships)

STANDARD: Employees and non-employees in leadership positions should avoid conflicts, as well as the appearance of conflicts between their private interests and the interests of the Medical System.

A conflict of interest occurs if a business or personal relationship with another person or entity interferes with your ability to perform your duties for the Medical System in an objective manner such as:

- An employee steers business to a vendor in which he/she or a family member have a personal financial interest
- An employee conducts private business on Medical System time
- An employee accepts gifts, meals or entertainment in excess of normal business courtesy that may appear to obligate the Medical System to do business with a particular contractor or vendor
- He or she serves as an officer, director, partner or any other advisory capacity for a supplier, customer, partner, subcontractor or competitor of The University of Maryland Medical System.

In general, employees are permitted to hold other jobs so long as doing so does not put the employee in a position to compromise confidential or proprietary information or prevent the employee from meeting the performance standards of their position at the Medical System.

If you have a question about whether a specific situation constitutes a conflict of interest, you should review the Disclosure of Financial Relationships policy and submit the associated questionnaire to Corporate Compliance.

Dealing with the media

STANDARD: In general, only the Medical System's executive officers and specifically designated members of the Corporate Communications department should speak to the media about the Medical System. Local media contacts by hospital personnel should be coordinated with the corporate communications department. See Appendix A for contact information.

Government filings and reports

STANDARD: The University of Maryland Medical System will endeavor to make all required filings and reports to federal, state, and local government authorities accurately and in a timely manner. This includes, but is not limited to, Medicare cost reports and other required program filings, tax filings, and certificate of need filings and reports.

The Medical System will cooperate with authorized requests for information from government auditors and other officials. Non-routine requests for information should be brought to the attention of the Office of General Counsel.

Employees and contractors responsible for providing information to be included in a report or filing to be signed by a more senior manager are responsible for ensuring the accuracy of the information, providing the information in a timely manner, and disclosing any problems or concerns to the manager before the final report or filing is submitted.

Documentation and work papers used to prepare or support information contained in a government report or filing should be retained in accordance with record retention policies.

Lobbying and political activities

STANDARD: All lobbying and other government advocacy carried out by or on behalf of the Medical System must conform to applicable federal and state regulations.

Lobbying - The federal government and many state governments impose rules on lobbying or other types of government advocacy activities. All lobbying and other legislative or public policy advocacy at the federal and state level must be approved by the SVP of Government Affairs (see Appendix A).

Political activities - Medical System funds and assets, including the use of buildings, may not be used to support a political candidate or party.

Gifts to public officials - Strict laws and rules govern the giving of gifts, including meals, to public officials and their staff members. Employees or agents should never give or promise anything of value to any government official in exchange for a specific action or decision.

Contacts by government agencies

STANDARD: The Office of General Counsel should be promptly notified (see Appendix A) if you or your hospital are contacted by a government agent in connection with an investigation.

Document the name of the agent, the agency, the subject of the investigation and any other relevant information. This will allow the Medical System attorneys to contact the agent to establish a basis for cooperating with the investigation. If the agent wishes to arrange a personal interview with you, the Medical System attorneys can explain your rights and obligations and respond to any questions.

No employee may destroy or alter a Medical System document or record in anticipation of a government subpoena or other government request for documents or make any intentionally false or misleading statement to a government official or advise another employee to do so.

Approved by the ECC 3/11/2013

APPENDIX A: IMPORTANT CONTACT INFORMATION AND RESOURCES

Corporate Compliance Contacts

Christine Bachrach
VP, Chief Compliance Officer
cbachrach@umm.edu
410-328-4141

Toya Jackson
Compliance Director
tjackson4@umm.edu
410-328-8848

Christopher Briddell
Compliance Director
cbriddell@umm.edu
410-328-8077

Martina Sedlak
Compliance Director
msedlak@umm.edu
410-328-4757

Affiliate Compliance Officers

UMMC
Christine Bachrach
cbachrach@umm.edu
410-328-4141

UMMC Midtown Campus
Don Ray
dray@umm.edu
410-225-8295

UM St. Joseph Medical Center
Christine Bachrach
cbachrach@umm.edu
410-328-6031

UM Rehabilitation and Orthopaedic Institute
Norbert Robinson
Nrobinson@umm.edu
410-448-6816

UM Baltimore Washington Medical Center
Sue Ward
Sward@bwmc.umms.org
410-787-4402

UM Shore Regional Health
(Medical Centers at Easton, Dorchester and Chestertown)
Linda Pittman
lpittman@shorehealth.org
410-822-1000, ext. 5446

UM Charles Regional Medical Center
Dr. Mark Dumais
mdumais@umm.edu
301-609-4322

UM Upper Chesapeake Health
(UM Upper Chesapeake Medical Center and UM Harford Memorial Hospital)
Debbie Bittle
dbittle@uchs.org443-643-3100

Mt. Washington Pediatric Hospital
Mary Ann Stewert
mstewert@mwph.org
410-578-5299

Corporate Shared Service Contacts

Office of General Counsel (aka legal)
Mia Zorzi
mzorzi@umm.edu
410-328-9700

Corporate Communications
Mary Lynn Carver
mlcarver@umm.edu
410-328-6776

Risk Management
Sue Kinter
skinter@mmcip.umm.edu
410-328-1770

Government Affairs
Donna Jacobs
djacobs@umm.edu
410-328-7410

Information Services and Technology (IS&T)
Brian Cassel
bcassel@umm.edu
410-328-8531

Human Resources
Susan Coe
scoe@umm.edu
410-337-1253

Supply Chain
Gary Kane
gkane@umm.edu
410-328-7557

Finance and Disbursements
Michelle Lee
smlee@umm.edu
410-328-1376

Reimbursement and Revenue Advisory Services
Alicia Cunningham
acunningham@umm.edu
410-328-1380

Patient Quality and Safety
Pat Ercolano
percolano@umm.edu
410-328-6982

Business Development
Alison Brown
abrown@umm.edu
410-328-7772

Corporate Internal Audit Group (CIAG)
Jeff Stavely
jstavely@umm.edu
410-328-2791

Office of Managed Care
Mike Wertz
mwertz@umm.edu
410-328-1723

APPENDIX B: University of Maryland Medical System Corporation Affiliates

University of Maryland Medical System Corporation includes the following Affiliates:

University of Maryland Medical Center
University of Maryland Medical Center Midtown Campus
UM Baltimore Washington Medical Center
UM Charles Regional Medical Center
UM Rehabilitation & Orthopaedic Institute
UM Shore Regional Health
UM St. Joseph Medical Center
UM Upper Chesapeake Health
Mt. Washington Pediatric Hospital

36 South Paca Street, LLC
O'Dea Medical Arts Limited Partnership
Advanced Imaging at St. Joseph Medical Center, LLC
OLP, LLC
Baltimore Washington Emergency Physicians, Inc.
Shipley's Choice Medical Park, Inc.
Baltimore Washington Health Enterprises, Inc.
Shore Clinical Foundation, Inc.
Baltimore Washington Medical System, Inc.
Shore Emergency Services Foundation, Inc.
Care Health Services, Inc.
Shore Health Enterprises, Inc.
Chester River Health Foundation, Inc.
SJMC Physicians, LLC
Chester River Health System, Inc.
SJMC-RA, LLC
Chester River Home Care & Hospice, LLC
Terrapin Insurance Company
Chester River Manor, Inc.
UCH/UMMS Venture, LLC
Civista Care Partners, Inc.
UCHS/UMMC Real Estate Venture, LLC
Civista Health Foundation, Inc.
UMSJ Health System, LLC
Civista Health, Inc.
UMSJ Properties, LLC
CMROC, LLC
UniversityCare, LLC
Maryland General Health Systems, Inc.
University of Maryland eCare, LLC
Maryland Medicine Comprehensive Insurance Program Self Insurance Trust
University of Maryland Medical System Foundation, Inc.
Memorial Hospital Foundation, Inc.
University of Maryland Regional Professional Services, LLC (d/b/a Towson Sports Medicine)
MHF – Federal Street, LLC
University of Maryland Regional Supplier Services, LLC (d/b/a University of Maryland St. Joseph Medical Equipment)
Mt. Washington Pediatric Foundation, Inc.
University of Maryland St. Joseph Foundation, Inc.
North Arundel Development Corporation
University of Maryland St. Joseph Medical Group, LLC
North County Corporation
University of Maryland St. Joseph Orthopaedics, LLC

RECOGNIZE • RESPOND • REPORT

COMPLIANCE QUESTIONS

WAYS TO REPORT

IN PERSON

- Your Supervisor
- Higher-Level Manager
- Hospital Compliance Officer
- Privacy Officer
- Email: compliance@umm.edu

ANONYMOUSLY

- Internal Hotline **410-328-3889** (DUTY)
- Toll-Free Hotline **877-300-3889** (DUTY)
- Online **www.reportIT.net**

  Username: UMMC

  Password: UMMC

Hospital Compliance Officer

Name:

Contact:

Privacy Officer

Name:

Contact:

WE WANT TO HEAR FROM YOU

Help Us Improve

University of Maryland Medical Center • UMMC Midtown Campus • UM Baltimore Washington Medical Center
UM Charles Regional Medical Center • UM Rehabilitation & Orthopaedic Institute • Mt. Washington Pediatric Hospital • UM Shore Regional Health • UM St. Joseph Medical Center • UM Upper Chesapeake Health

Affiliates of the University of Maryland Medical System

UNIVERSITY of MARYLAND MEDICAL SYSTEM

Standards of Business Conduct Receipt Form

I have read and understand the Standards of Business Conduct for University of Maryland Medical System (Medical System). I understand that adherence to these Standards is an essential element of my employment.

I agree to discuss any questions or concerns related to the Standards with my supervisor or a member of management. I acknowledge and agree that I am responsible for familiarizing myself with the content of and complying with the Medical System policies and procedures.

I understand that applicable laws may change from time to time and new laws may be enacted. I acknowledge and agree that I am responsible for familiarizing myself with and complying with any new or revised policies or procedures. I further acknowledge and agree that the Medical System reserves the right in their respective sole discretion to amend policies, procedures, programs and/or guidelines at anytime.

I acknowledge and agree that the Standards are not an employment contract.

I certify and attest that I currently am not and have not been sanctioned by or excluded from participation in federal health care programs. I will notify Human Resources immediately if I am or may be sanctioned by or excluded from participation in federal health care programs, including but not limited to any action or activity which could become the basis for an adverse action by a federal health care program.

I certify and attest that I am not aware of any ongoing activity within the Medical System that may violate the Standards or applicable law. I agree to notify my supervisor or a member of management immediately if I am or become aware of any activity that may violate the Standards or applicable law.

DATE .....

EMPLOYEE SIGNATURE .....

PRINT NAME .....

perf line does not print


UNIVERSITY of MARYLAND
MEDICAL SYSTEM

APPLIED DATA GROUP
PO BOX 4076
ASHBURN, VA 20148

UM UCH/UHCC Regional Partnership - Proposed BI Solution

1. Background

University of Maryland Upper Chesapeake Health (UM UCH) and Union Hospital Cecil County (UHCC) have entered into a regional partnership (RP) to better serve patients in Harford and Cecil Counties who have high hospital utilization and multiple chronic conditions. The RP will use an innovative care model that is able to coordinate care across many providers and includes two Community Care Centers (Care Centers).

The RP will require a robust Business Intelligence (BI) solution to evaluate program success and optimize care delivery. The BI solution will need to combine data from multiple sources to give an accurate picture of patient activity across the care continuum. It will need to identify the target patient population and provide actionable reporting on outcomes and efficiencies. The solution should provide quick time to value and should also serve as a solid foundation that allows the partnership to support additional population health programs in the future.

The proposed solution will build on the strong technical foundation that exists at the RP hospitals and will combine an innovative use of data sources, key partnerships, and proven best practices to deliver a cost effective solution.

This document presents a proposed BI solution including a schedule and high level estimates. The proposed solution is based on several interviews with key personnel from UM UCH, UHCC, and CRISP. It is meant as a high-level roadmap to be used by the RP in their planning. As such, it does not attempt to provide implementation details that would be defined by the broader team when the project commences.

2. Solution Summary

Providing actionable data to drive better outcomes will require three main components: gathering data, transforming and storing data, and delivering the actionable information to end users. Many BI or Data Warehouse (DW) projects start with the first component and attempt to gather as much data as possible and then figure out what to do with it. This can result in a bloated, over budget, and ultimately unsuccessful project. Since the goal of the solution is to provide actionable data, we recommend an

approach that is driven by the key organizational questions that need answers. With that in mind, the project components will be addressed in reverse order.

Actionable information must get to end users for a BI solution to bring value to the organization. Moving beyond interesting data to actionable information requires both a clear vision for what drives an organization and a capable BI platform. The RP has a clear vision for what questions will need to be answered to better serve the patient population, and will surely uncover additional questions as their BI platform matures. This will also inform the data model and the data sources needed. Representative questions are listed as part of the description of the project iterations. The BI platform should meet the specific requirements of the project, which are addressed in a later section.

For the BI platform to deliver actionable data, the source data must be transformed and stored in a data structure that is optimal for data retrieval. Generally, this is accomplished by implementing a data warehouse or group of data marts that use a dimensional data model (star or snowflake schema). The dimensional data includes both fact tables (for key measures) and related dimension tables (for grouping and filtering). The proposed solution implements a data warehouse stored in a relational database and will use an Extract, Transform, and Load (ETL) tool to transform and load the data. Based on existing RP expertise, current systems, and suitability, the proposed solution uses Microsoft SQL Server as the data warehouse platform and Microsoft SQL Server Integration Services (SSIS) as the ETL tool.

The source data will originate in multiple internal and external source systems. Data will be selectively loaded based on current and future reporting requirements. The data sources will include RP operational systems as well as external data, most notably CRISP data feeds and available Claims files.

The sections below describe the solution in greater detail. A diagram is provided at the end of the document that shows the proposed data flow.

2.1 Data Sources

The primary internal RP data sources will be the hospital and ambulatory Electronic Health Record (EHR) systems. The hospital EHR systems are used for hospital and Care Center registration, while the ambulatory EHRs are used for Care Center and Primary Care Physician (PCP) patient documentation. In addition, the ambulatory EHRs will have patient documentation for patients seen by an RP employed PCP or specialist.

The other key internal data source will be the care management system used to support the patients served by the RP Care Centers. Care Manager documentation for all Care Center patients will be provided by Mirth Care, an application that will be hosted by the Chesapeake Regional Information System for our Patients (CRISP).

The following table includes RP systems that are currently in place or that will be in place when work on the proposed solution begins:

	UCH	UHCC
Hospital HER	Meditech 6.07 (upgrade to 6.1 planned)	Meditech 6.1
Ambulatory HER	NextGen	Allscripts
Care Center registration	Meditech	Meditech
Care Management	Mirth Care	Mirth Care
Reporting	Medisolv, other SQL-based solutions using Meditech DR	ePortal (SQL-based reporting tool) using Meditech DR

To get a complete picture of Care Center patient activity, it will be necessary to load data from multiple external sources. This will be addressed by partnering with CRISP, which is described in the following section.

2.2 Use of CRISP

CRISP will occupy a central role in the solution. The RP intends to leverage data currently available from CRISP, including admission, discharge, and transfer (ADT) data for activity at all Maryland hospitals and some Washington, DC and Delaware hospitals. This data will be provided by CRISP using a standard electronic format. In addition, CRISP will provide C-CDA data from Hospitals (currently, 13 hospitals participate, including UCH and Union). This will allow the RP to capture data such as Diagnosis codes, Labs, and Radiology reports.

As part of an existing memorandum of understanding (MOU), CRISP will work to acquire data from community providers based on a prioritized list provided by the RP. The list will include ambulatory practices, long-term care/post-acute facilities, local health departments, and other relevant community health providers.

As additional data sources feed CRISP, these data sources will also be sent to the RP using the CRISP "router". Future data sources are expected to include electronic clearinghouse (RelayHealth, Emdeon, etc) data and data from the CRISP-hosted Mirth Care platform. The following data is also expected to be available from CRISP:

- Alert subscribers for a given patient.
- The existence of a Care Plan in CRISP
- Case Mix
- Risk Score
- Care Alerts

While CRISP plans to expose much of this data through APIs, they will also work with the RP to provide a feed that includes data for all patients in the Care Center roster.

CRISP will also provide the unique patient identifier and associated medical record numbers generated by their Enterprise Matching Patient Index (EMPI) process. This will enable the RP to better track patients across care providers.

2.2 ETL and Data Warehouse Architecture

The source data will be extracted, transformed, and loaded into the Data Warehouse (DW) platform. The planned DW architecture will build on the strong technology foundation that exists at both UM UCH and UHCC. It will include the addition of a Data Warehouse and associated processes to load and transform data and a BI platform that will present actionable data to end users.

The Data Warehouse will be on a MS SQL Server platform and will follow accepted dimensional data modeling practices and include several dimension and fact tables. The solution will include three types of databases: Staging, the Operational Data Store (ODS), and the Data Warehouse database. Staging will be refreshed daily with a copy of the source tables as they appear in the source system. ODS will have the same group of tables as Staging and will be updated daily with data that has changed in the source tables. The Data Warehouse will store the transformed data in dimension and fact tables, providing a format that is both flexible and efficient for reporting. It is also updated daily with changes.

There will be separate Staging and ODS databases for UM UCH and UHCC. The integration point for data will be the DW database. Dimensional data will be integrated into dimension tables when possible. For example, there will likely be master patient and provider dimension tables. However, the source of the data will always be maintained. A similar approach will be taken when loading fact tables, such that it will be possible to track patients across hospital and ambulatory visits. The CRISP-provided Enterprise Master Patient Index (EMPI) will be stored along with the source system and source system Medical Record Number (MRN). This will facilitate reporting on patients across source systems when required. The final state should be a Data Warehouse that contains a set of dimension and fact tables that support reporting on Care Center patients across UM UCH, UHCC, and community providers.

SQL Server Integration Services (SSIS) will be used as the Extract, Transform, and Load (ETL) tool and will drive the daily update process. The ETL design will reflect the separation of databases into Stage, ODS, and DW in that there will be separate top-level packages for each database. Each top-level package will contain multiple child packages. In the case of Stage and ODS there will be a child package for each source table. For the DW, there will be a child package for each target dimension and fact table.

2.3 Business Intelligence (BI) Platform

End users will consume the DW data through the BI platform. The RP currently uses multiple SQL-based tools for reporting but it is recommended that they standardize on a single platform. Selecting the right

platform will be a key activity in the early part of the project and, as such, the decision will be made by a group appointed by the RP.

The selected tool should provide the following features:

- Data visualization and discovery
- Short time-to-value
- Tabular reports
- Data export
- Role-based security
- Data access limited by organization or role

It should also have the following characteristics:

- Scalability
- SQL-based development platform
- Agile UI design and development

3. Development Approach

Several guiding principles will guide the development approach: the leveraging of existing internal and external tools and systems, a process driven by the end-user requirements, an iterative development approach, and, where possible, the use of standard data formats for data transfer.

As mentioned earlier, a key to the technical solution will be integration with the Chesapeake Regional Information System for our Patients (CRISP). Leveraging CRISP will enable the RP to get a more complete picture of the patient across the continuum of care and will also enable the RP to take advantage of future CRISP enhancements.

In addition, the existing technical infrastructure and reporting platforms will be leveraged to enable the project to move forward quickly and efficiently. The RP will also draw upon the experience and expertise of existing employees when developing the solution. Both hospital systems have data platforms that support extensive reporting out of their respective Meditech Data Repositories (DR). In addition, each hospital has a team of analysts in place that include subject matter experts (SMEs) and report writers. They have expertise in the Meditech DR and SQL-based reporting tools. Each hospital also has SMEs for their ambulatory systems. It should be noted that the goal of solution is not to replace or duplicate existing operational reporting that already serves the RP health systems well, but rather to focus on the additional reporting and innovations needed by the Care Center model. However, it is anticipated that the current staff will benefit from the new data and tools as they become available.

As mentioned earlier, the solution will be driven by the end-user data requirements, focusing on providing actionable metrics that answer key questions. The focus on end-user requirements will lend

itself to an iterative development approach. The iterations will line up with the overall program iterations and will ensure that the actionable information needed for program success is available in a way that end users can easily consume. The proposed iterations will be described in the following section.

Standard data formats will be considered for transferring data from source systems to the data warehouse whenever possible. For example, instead of connecting directly to the ambulatory EHRs it may be possible to use CCD files. This has the potential to limit development effort and to minimize the impact in the event that the RP changes one or more of the ambulatory EHRs.

4. Solution Iterations

The solution will be implemented using an iterative approach. This approach will allow the RP to realize value quickly and will also reduce overall risk by demonstrating the ability to execute early in the project. The iteration details may change based on future RP decisions and additional analysis.

4.1 Iteration 1 – Call Center monitoring

The initial iteration will focus on tracking the patients that have been admitted to the Care Centers to confirm that the Care Centers are having a positive impact on patient outcomes. It is expected that Care Center patients will have less hospital admission and ED visits than those with similar profiles who were not treated in the Care Center.

Because the focus of this iteration is on foundational monitoring, it is important that this functionality is in place as soon as possible. With that in mind, the goal is to have this iteration complete within 90 days of receiving the grant.

Work during this iteration will cover each component of the project. There will be analysis and planning as the project starts which will include program considerations as well as technical details. That will lead to a cycle of data modeling, ETL work, and BI development. The BI tool evaluation and selection process will occur during this phase.

Representative Iteration 1 questions that the solution will answer are the following:

- Who is in the Care Center?
    - When were they admitted?

- Are the right patients in the Care Center?
    - What are the readmission rates?
        - By condition
        - Time from discharge
        - By provider
        - By zip code
    - Which patients have been in the ED?
        - By condition

        - Time from discharge
        - By provider
        - By zip code

- How are patients being seen?
    - Types of encounters (office, phone, web)

The following data sources are considered in scope for Iteration 1:

- Care Center registry data
- Physician documentation
- Care Manager documentation
- CRISP - ADT, EMPI, and C-CDA data from participating hospitals

Reporting for this iteration will include registration data since program inception.

4.2 Iteration 2 – Care Center optimization

The second iteration will seek to determine the impact that Skilled Nursing Facilities (SNFs), home health care, and other community care providers have on Care Center patients. It is also expected that RP hospital EMR data and/or RP ambulatory data will be loaded as part of this iteration in preparation for later iterations. The project schedule will determine the timing and order of this work.

Again, this stage will include analysis as the Iteration reporting requirements are determined. These requirements will be informed by ongoing evaluation of Iteration 1 functionality. This iteration will also include extending and improving Iteration 1 functionality.

In addition to the analysis work, this iteration will also see extensive data modeling, ETL work, and BI development.

The following are representative questions that this iteration will address:

- Skilled Nursing Facilities (SNF)
    - What is the length of stay in a SNF?
    - What are the ADTs?
    - What is readmissions rate after discharge from SNF?
    - What is rate of ED visits after discharge from SNF?

- Home health - same as above

The following data sources are required to answer the questions:

- CRISP – ADT data for community care providers including SNFs and home health care, Care Plan data, and possibly ENS alert subscribers
- Telehealth (either direct or from CRISP)
- Meditech (“Adm” and “Bar” tables)
- NextGen and Allscripts ambulatory data

4.3 Iteration 3 - Predicting high utilizers

The third iteration will attempt to identify leading indicators for high hospital utilization and will also seek to identify appropriate interventions that will limit future utilization for these patients. As part of these leading indicators, this iteration will identify and calculate a limited number of key quality measures to analyze their impact on utilization.

Regarding the key quality measures, one potential approach is to identify one measure for each of the three or four chronic conditions that are most commonly present in high utilizers. The ambulatory data required to calculate these measures will be loaded in the DW. It is possible that a composite measure for these measures will be created. This iteration will only calculate these measures for patients with a Primary Care Physician (PCP) in an employed provider group, unless adequate data is available through CRISP for external providers. The measures will then be analyzed and modified to provide an indicator of how management of chronic conditions impacts outcomes (admissions, ED visits). It could also help the RP better understand who should be enrolled in the Care Center; for example, do patients not meeting the measure(s) have less utilization if they are handled by the Care Center? These measures will also serve as preparation for CMS shared savings or other such arrangements, both from an organizational and technical standpoint.

If these measure have the expected predictive capacity, the measures will also form a basic physician scorecard that can be pushed out to the employed physician groups. In addition, the underlying data will be provided so providers can take action on patients who aren't meeting the measure(s).

The following are representative Iteration 3 questions:

- Do patients meet key quality measures for certain chronic conditions
    - Care Center patients
    - Other patients
- Is a patient a high utilizer or at risk for becoming a high utilizer?
    - How many Hospital visits? (3 or more)
    - How many ED visits? (5 or more)
    - Is the patient taking high risk medication?
    - Is the patient taking More or less than 7 meds?
    - What chronic conditions does the patient have?
    - Is the "Boost" tool in Meditech correctly predicting whether a patient will be high utilizer?
    - Is the predicted data of discharge accurate in Meditech?
    - Referrals
        - Was a patient referred to another provider?
        - Did patients attend referral appointments?

The following data sources will be required for the third iteration:

- Ambulatory data to satisfy quality measures
- CRISP – Additional community care provider data, including behavioral health, external PCPs and specialists, Health Dept.
- Meditech referrals

- Ambulatory referrals

The third iteration will also include enhancements to Iteration 1 and 2 functionality. The goal of the first three iterations is to provide a foundation upon which to build analytics that support local or statewide payment innovations, including ACO Shared Savings or an all payer model.

4.4 Iteration 4 - Quality measures for Physician Scorecards/Shared Savings

The final planned iteration will provide the necessary quality metrics to support ACO Shared Savings or other statewide payment innovations. This iteration will largely be informed by what is learned during the first three iterations.

It is anticipated that there will be an appetite for additional quality measure reporting. If that aligns with the creation of an ACO, then at a minimum the CMS quality measures defined by CMS will be in scope. These would be likely be addressed with an iterative approach and would include the following domains:

- Diabetes
- Hypertension
- Ischemic Vascular Disease
- Heart Failure
- Coronary Artery Disease
- Depression
- Preventive Care

In addition, it is likely that during this iteration CMS Claims or all payer claims files would be loaded to provide additional intelligence into how best to manage high risk patients and lower costs. Additional CRISP data would once again be part of the iteration, as would enhancements to previous iteration functionality.

The following data sources will be required for this iteration:

- Ambulatory - Meds, Labs, Vitals, Radiology
- CMS Claims/All payer claims
- CRISP – clearinghouse data (Relay Health, Emdeon), additional community care provider data

4.5 Future iterations

Future iterations will build on the capabilities provided in the first four iterations and will provide value beyond the current Care Center population including regional or statewide populations.

5. Data Governance and Security

A key to success in any project of this type is an appropriate data governance strategy. That will ensure that stakeholders agree on key definitions and measures. It also will ensure that sensitive data is only viewed by authorized parties.

While the intention is to develop a lasting partnership, the solution considers the possibility that data will need to be uncoupled at some point in the future. All data will include source information, allowing the flexibility to interrupt or remove data access or data loads at any point.

The solution will be built with security in mind from the beginning, and will include both infrastructure security and end-user access control.

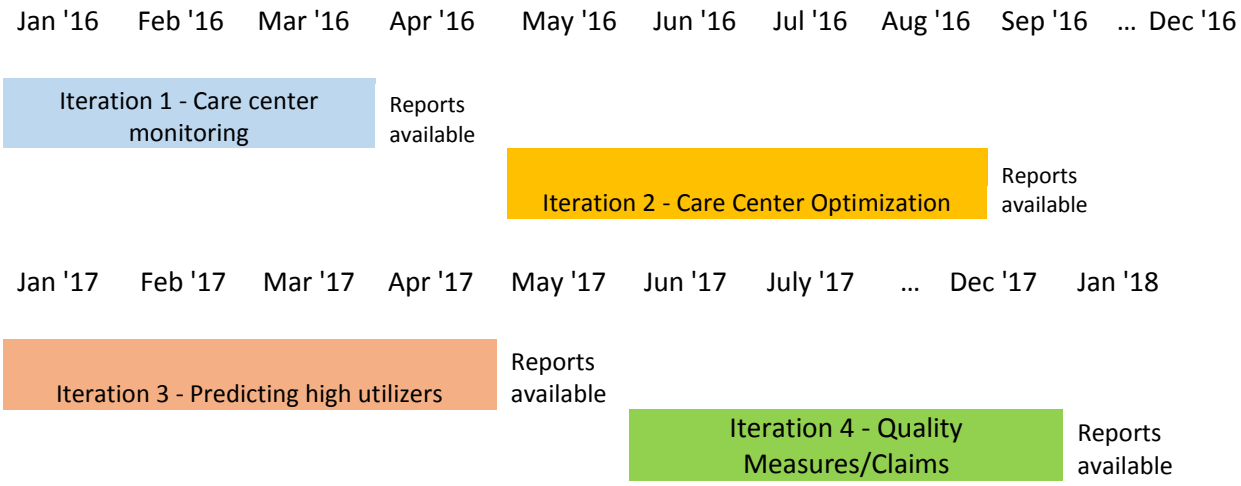
The BI platform selected will include functionality to allow role-based user access. This will allow data to be viewed only by authorized users. It is likely that there will be high level RP data that is viewable by end-users across the RP. There will also be the ability to partition data access based on facility.

Data that is transferred or stored within the RP network will be protected by the security standards and protocols that are already in place, including industry accepted firewall and network security configurations. CRISP data transfers will leverage the standards and protocols that are already in place at the RP locations for data exchange with CRISP. Any additional connectivity required will adhere to industry recognized security standards.

6. Schedule

The goal of the schedule is to execute the project efficiently and successfully. The proposed roadmap prioritizes delivery of functionality based on overall RP goals.

The following timeline shows the major milestones and proposed schedule.



7. Cost Estimates

7.1 Architecture and Development

The following identifies key milestones and estimated hours. The cost is based on a blended consulting rate.

Description	Consulting Hours	Consulting Cost
Iteration 1 (Year 1)		
Key questions/measures	80	$ 14,000
Data Source analysis	80	$ 14,000
Data model	80	$ 14,000
Staging/ODS ETL - UM UCH	80	$ 14,000
Staging/ODS ETL - UHCC	80	$ 14,000
Staging/ODS - CRISP	80	$ 14,000
DW ETL - UM UCH	80	$ 14,000
DW ETL - UHCC	64	$ 11,200
DW ETL - CRISP	64	$ 11,200
BI design	80	$ 14,000
Reports	80	$ 14,000
Testing	40	$ 7,000
Project Management	133.2	$ 23,310
Iteration 1 subtotal	**1021**	**$ 178,710.00**
Iteration 2 (Year 1)		
Key questions/measures	80	$ 14,000
Data Source analysis	64	$ 11,200
Data model	64	$ 11,200
Staging/ODS ETL - UM UCH	64	$ 9,600
Staging/ODS ETL - UHCC	64	$ 9,600
Staging/ODS - CRISP	40	$ 6,000
DW ETL - UM UCH	64	$ 9,600
DW ETL - UHCC	64	$ 9,600
DW ETL - CRISP	40	$ 6,000
BI design	80	$ 14,000
Reports	80	$ 12,000
Testing	40	$ 6,000
Iteration 1 enhancements	80	$ 12,000
Project Management	124	$ 18,540
Iteration 2 subtotal	**948**	**$ 149,340**

Year 1 (Iterations 1-2) subtotal	**1969**	**$**	**328,050**
Iteration 3 (Year 2)			
Key questions/measures	80	$	14,000
Data Source analysis	80	$	7,000
Data model	80	$	7,000
Staging/ODS ETL - UM UCH	80	$	6,000
Staging/ODS ETL - UHCC	80	$	6,000
Staging/ODS - CRISP	40	$	3,600
DW ETL - UM UCH	80	$	12,000
DW ETL - UHCC	80	$	12,000
DW ETL - CRISP	24	$	3,600
BI design	80	$	14,000
Reports	80	$	12,000
Testing	40	$	6,000
Iteration 1 and 2 enhancements	120	$	18,000
Project Management	115	$	17,280
Iteration 3 subtotal	**1059**	**$**	**138,480**
Iteration 4 (Year 2)			
Key questions/measures	80	$	14,000
Data Source analysis	80	$	14,000
Data model	80	$	14,000
Staging/ODS ETL - UM UCH	40	$	6,000
Staging/ODS ETL - UHCC	40	$	6,000
Staging/ODS - Claims	80	$	12,000
DW ETL - UM UCH	80	$	12,000
DW ETL - UHCC	80	$	12,000
DW ETL - CRISP	80	$	12,000
BI design	80	$	14,000
Reports	80	$	12,000
Testing	40	$	6,000
Iteration 1, 2, and 3 enhancements	160	$	24,000
Project Management	150	$	22,500
Iteration 4 subtotal	**1150**	**$**	**180,500**
Year 2 (Iteration 1-2) subtotal	**2209**	**$**	**318,980.00**

7.2 BI Tool

Based on the BI Tool recommendations made earlier in this document, it is recommended that the RP budget 35k in Year 1 costs and 35k in Year 2 costs. The Year 1 investment will include the initial purchase and the licensing necessary to deploy the tool to key users. The Year 2 investment will include additional licensing and the potential for infrastructure costs as the solution scales.

After Year 2, the RP should budget for a software maintenance fee and potentially additional license purchases. It is recommended that the RP plan for an annual cost after Year 2 of 20k/yr.

The estimates for BI Tool cost are for budgetary purposes only and don't represent the actual cost of the tool that is ultimately selected. While they are made with a good knowledge of the leading tools that are likely to meet the requirements of the RP, they are meant as an entry level cost and will escalate as the demand for data grows.

7.3 Hosting and Connectivity

The RP plans to have a third party host the solution. It is expected that hosting costs will be $8-11k/month and that connectivity will cost $1-3k/month.

It is anticipated that the solution will require a single Windows-based server at the hosting facility with adequate processors, RAM, and storage for the data warehouse and associated processes. The location of the BI platform will be determined as part of the tool selection process.

7.5 Monitoring and Maintenance

The partner that develops the solution will also likely provide monitoring and maintenance in years 1 and 2. The RP should budget $2k/month for this support, which would total approximately 18k in year 1 and $24k in Year 2. Actual cost for this will depend on the details of the Service Level Agreement (SLA).

It is recommended that this be done in partnership with a technical resource from the RP to facilitate knowledge transfer. The cost for this can then be shifted to the RP after year 2.

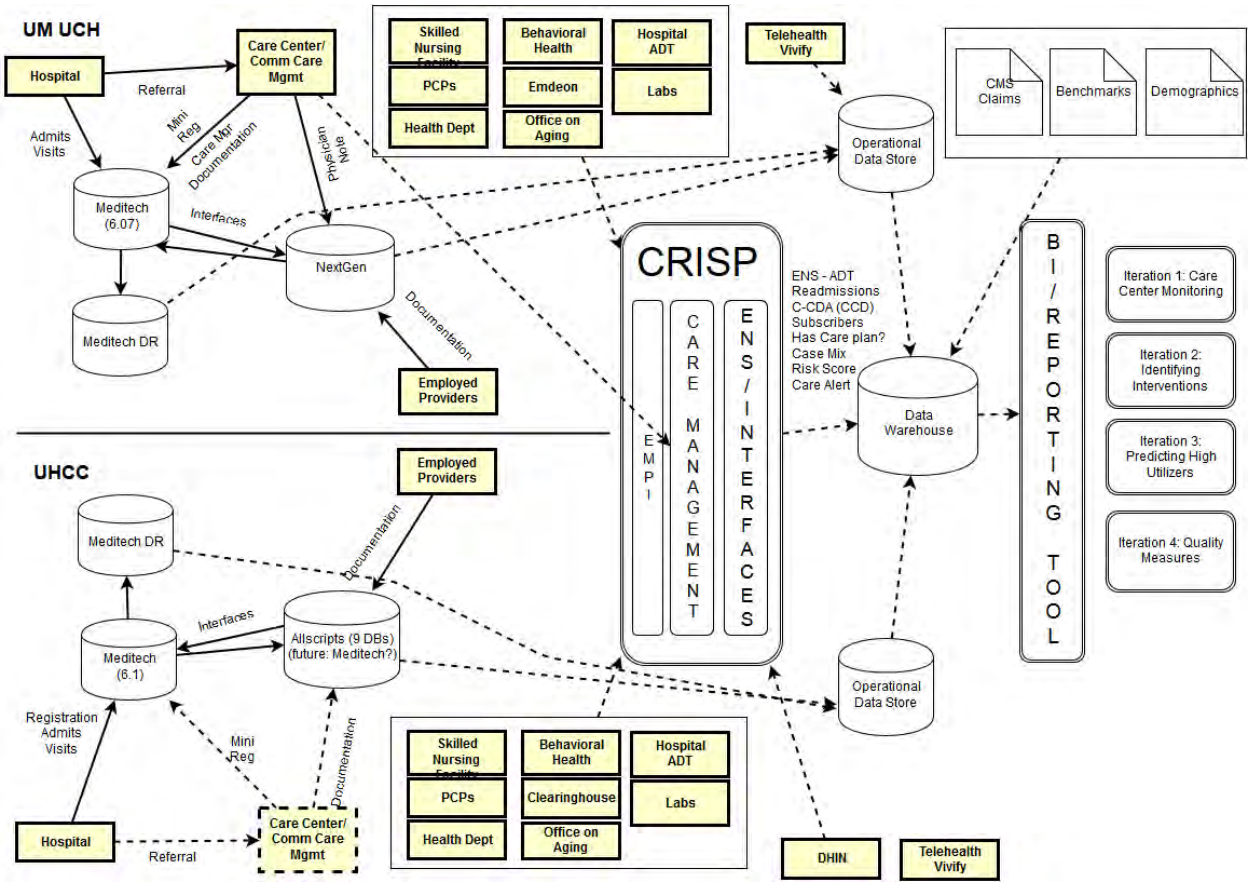
8. Key Assumptions and Risks

1. Connectivity is established between the DW and the source systems in a timely manner.
2. The hosting and connectivity is in place in a timely manner.
3. CRISP data referenced in the plan and MOU is available according to the schedule specified in the MOU.

4. Key technical, administrative, and clinical SMEs are available.
5. All data needed for metrics are stored in source systems as structured data.
6. Data sources have a structured column that stores the last updated date for each table or set of tables. These columns will be used to incrementally update the data.
7. Schemas will be provided for C-CDA files and other structured files.
8. Data models and/or data dictionaries exists for source databases. Alternatively, SMEs area available who are familiar with the data structures.
9. Schedules and estimates are based on information gathered during the assessment and will be confirmed or modified during the initiation phase of the project.

9. Data Flow

The data flow below shows the major components of the proposed solution. Solid lines designate flows and functionality that is already in place, while dotted lines designate planned data flows and functionality.



Mirth Care Enterprise. Population Health Management.

Manage patient populations; help drive coordinated care

Mirth® Care Enterprise is a cloud-based chronic disease and care management platform that supports patient engagement and drives population health outcomes using data integration created with Mirth® Connect, Mirth® Mail, and Mirth® Results. It supports program administrators, nurse care managers, and other care team members to help them manage patients with prevalent chronic conditions at both population and individual levels.

The system enables greater efficiencies by standardizing population health management processes where timely and effective care increases quality of life, improves outcomes, and reduces healthcare costs.

What makes Mirth Care Enterprise different?

- Expert content supports chronic disease management
- Supports advanced care teams and medical homes
- Customizable rules, decision support tools, questionnaires, and clinical content supports varying organizational needs
- Robust filtering capabilities for the patient population (positive and negative)
- Performs batch activities on selected sets of patients and other data objects
- Creates tasks, alerts, and reminders at clinically appropriate times using system rules
- Tracks performance measures longitudinally and uses them to help manage care team performance
- Identifies, groups, and manages sub-populations

Mirth Care Enterprise makes it easier to manage complex patients and your entire patient population by delivering true community care integration.

mirth®

Mirth Care Enterprise in practice

Facilitate patient-centric disease management and care coordination processes:

- Enroll patients in defined clinical programs
- Collect data related to clinical focus areas
- Create a personalized care plan to address patient issues and set treatment and self-management goals
- Document and report on various activities in support of patient populations, such as care planning, contacts, tasks, fulfillment, resource assignment, etc.
- Leverage decision support tools/system logic that use patient attributes and client-defined minimum data sets to inform the user about:
  - Which clinical values should be collected and monitored
  - How and where to focus care management efforts
  - Optimum and "alert" ranges for clinical values
  - Recommended medication classes appropriate for each patient
- Use the care manager interface to enable all of the care team members to facilitate the coordination of care and shared team activities

Workflow:

- Enables care managers to help build deep clinical relationships with patients during the critical time between office visits
- Uses industry standards to receive secure communication and data exchange between users and any other members of the care management team

Integration:

- Bi-directional exchange of patient demographic, group, and clinical data with the Mirth Results clinical data repository
- Synchronization with Mirth Mail, which allows secure communication between users and any other members of the care management team using the Direct protocol messaging architecture and standards
- Retain patient context when switching between Mirth® applications
- EHR and Mirth Results users have direct access to care management data at the point of care (most recent care plan, medication reconciliation, and patient summary) and visual indicators for patients who are actively care managed
- Ability to pull in high-value cohorts of patients in need of care management from community and local data

Mirth Care Enterprise supports chronic care management

Mirth Care Enterprise clinical modules

- Mirth Care Enterprise supports the management of cardiovascular disease (including congestive heart failure, hypertension, and hyperlipidemia); asthma (adult and pediatric); diabetes; and chronic obstructive pulmonary disease
- System flexibility enables users to define and implement additional clinical and/or preventive care modules
- Set individualized clinical goals based on patient enrollment in clinical modules
- Define a minimum data set for each clinical module

Online content integrated with Mirth Care Enterprise

- A variety of health behavior and condition-specific questionnaires enable care managers to conduct consistent patient assessments and patient-reported outcomes, leading to better informed care planning
- Access patient guides that provide condition-specific and behavior-change strategies for educating and empowering patients
- Gain key recommendations that operationalize evidence-based guidelines for clinical management and program evaluation
- Use care manager guides that provide clinical education and process guidance to care managers for assessing patients, building care plans, and identifying interventions
- Leverage care manager priorities that correlate the patient care objectives with the corresponding patient education materials to facilitate the education process between care managers and patients
- Benefit from consumer-tested, low-literacy patient education materials for chronic conditions, prevention, and lifestyle modification

Mirth Care Enterprise, under its previous name of InformaCare, has been used to manage population health by numerous healthcare/plan systems across the US, including:

- WellPoint
- Molina
- Florida Medicaid
- The UK National Health System
- Providence Health Plans
- Blue Cross plans in Idaho, Kansas, South Carolina

Proven results

- Improved self-care abilities
- Reduction in acute symptoms
- Demonstrated patient and physician satisfaction
- Adherence improvements
- Care management reporting for process improvement and scale

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FL26-5/15

CRISP

Connecting Providers with Technology to Improve Patient Care

ICN Infrastructure Support Memorandum of Understanding

DRAFT

This Memorandum of Understanding (MOU) between Chesapeake Regional Information System for our Patients (CRISP) and the University of Maryland Upper Chesapeake and Hospital of Cecil County Partnership ("Upper Chesapeake" or "RP") sets forth the terms and understanding to enhance coordination services provided through the state-designed health information exchange (HIE) Integrated Care Network (ICN) infrastructure with the goal of facilitating care, reducing costs, and improving health outcomes.

Purpose

CRISP will help the RP plan and implement infrastructure for care coordination programs developed within the Health Services Cost Review Commission's Hospitals for Health System Transformation and subsequent care transformation, quality improvement, and cost reduction initiatives. RP and CRISP will work jointly to meet the objects in each of the core ICN categories listed below and to execute the deliverables set forth below.

Community Provider Connectivity

CRISP is connecting ambulatory practices, long-term care/post-acute facilities, local health departments, and other relevant community health providers in order to:

- Easily understand where a patient has received care or has a treatment relationship with a non-hospital provider.
- Achieve clinical document transfer from to the non-hospital provider to the CRISP clinical query portal for treatment decisions at the point of care.

Successfully connecting with these organizations requires close collaboration between the RP and CRISP. Specific deliverables include the following:

RP Agrees To:	CRISP Agrees To:
• By end of 4Q 2015: o Provide CRISP with a prioritized listing of ambulatory, post-acute, or other providers that it is interested in having ADT or C-CDA connectivity with CRISP o Individually contact and encourage the identified organizations to work with CRISP to establish ADT and C-CDA connectivity	• By end of 1Q of 2016: o Make contact with each practice identified by Upper Chesapeake in order to communicate the process to get connected, timing, financial contributions that CRISP can make, etc. o Provide Upper Chesapeake with a work plan and high-level timeline for getting the identified organizations connected • By end of 4Q 2016:

- CRISP will make best efforts to establish either an ADT / encounter connectivity, or clinical data connection with 75% of the identified organizations.

Preliminary Listing of Organizations Identified by Upper Chesapeake:

- UC Diabetes Center
- UC Wound Care Center
- UC Behavioral Health
- UC CARE Center* (Transition Clinic)
- UC Cardiology Practice
- UC Endocrinology Practice
- West Cecil Beacon Health (FQHC)
- Union GYN *
- Union Primary **
- Union Pulmonology **
- Union Urology **
- Union ENT **
- Union Endocrinology **
- Union Psych ***
- Union GI ****
- Union Vascular ****
- Union Neurology *****
- Union Hematology & Oncology *****
- Mian
- Rusia
- John Mulvey
- RHOPA (Jamil Khapri, Martha Hossord) Regional Hemotology and Oncology Physician Associates
- Brian DeMuth
- NBMA (North Bay Medical Associates) Gary Beste, Timothy Odonnell, Eileen Pack, Narayana Pula, Madhu Sachdev, Sheelmohan Sachdev, Elizabeth Strab
- Stone Run - barry baker, joseph weidner
- Christopher Wendel
- Renee Perkis, Susan Ferenz
- Meridian Practice - Carlo Gopez, helene Lee
- Tri-State (Elizabeth Lowe)
- Ian Myers
- MaherNashed
- Fair Hill - Bonni Roberts, Venessa Dillar
- PWH (Partners in Womens Health) Judith Hidalgo-Ahned
- Pulmonary Critical Care Associates of Baltimore

- Nephrology Center of Maryland
- Advanced Imaging
- Quest/ Lab Corp

Reporting and Analytics

CRISP Reporting Services provides information to hospitals and provider organizations to facilitate outcome measurement, strategic planning, and care coordination. CRISP will continue to enhance available reports and the RP will provide feedback regarding these offerings.

In order to gain broader adoption and value from CRISP Reporting and Analytics services, the RP and CRISP agree to the following:

RP Agrees To:	CRISP Agrees To:
• By end of Q1 2016: o Upper Chesapeake will pilot the Tableau PaTH reports and provide feedback to CRISP on improvements that can be made.	• By end of Q4 2015 o Until PaTH reports becomes available, a CRISP resource will work with Upper Chesapeake will identify patients for care management. • By end of Q1 2016: o Provide access, training and a forum to submit feedback to Upper Chesapeake resources that are using the reports. o As required, train and credential identified personnel to utilize CRISP Reporting Services (CRS).

CRISP Alerts and Notifications

Alerts and notifications might take a variety of forms leveraging CRISP tools such as ENS and other integration capabilities. CRISP and RP will review potential use cases for in-context alerts with the intention of piloting those applicable to RP provider sites. Examples of use cases include:

- A notification that a care plan exists
- Notification that a patient has had a recent hospitalization
- Notification that a patient has a PCP subscribing to ENS alerts
- Alert that a patient risk score has increased

In order to gain broader adoption and value from alerts and notifications, the RP and CRISP agree to the following:

RP Agrees To:	CRISP Agrees To:
• By end of Q4 2015: o Pilot the ENS PROMPT user interface and provide rapid feedback to CRISP on new features or functions that could be provided. o Provide documentation of patient consent process o Have Hart to Heart Transportation act as an ENS data source to trigger notifications to RP subscribers.	• By end of Q4 2015: o Provide the Care Center with access to the ENS PROMPT user interface, provide training and support as required. o Incorporate encounter data from connected ambulatory practices for care center members o Establish a new ADT feed with Hart to Heart Transportation and make it available in ENS.

CRISP Clinical Query Portal Enhancements

CRISP is improving the functionality of the existing Clinical Query Portal to include elements that are relevant to more coordinated care. Examples of this improved functionality include:

- A listing of current notification subscribers
- A dedicated section that lists care plans that have been provided to CRISP.
- A dedicated section that provides a care summary
- A risk score derived from risk-stratified case mix data

In order to gain broader adoption and value from the CRISP Query Portal, the RP and CRISP agree to the following:

RP Agrees To:	CRISP Agrees To:
• By end of Q45 2015: o Work with CRISP to inventory care plans that are actively used within the RP , notify CRISP of their source system and ability to send to the CRISP query portal	• By end of Q1 2016: o Connect with source systems to begin receiving care plans and make them available in the CRISP query portal

CRISP Care Management Software

RP will provide feedback on care management software currently in use (or other market analysis on existing software in the community, if available). RP and CRISP will work jointly to develop appropriate strategies to expand community-wide use of care management software, potentially through interfaces with multiple vendors and/or provision of a standard product as needed.

In order to gain broader adoption and value from the CRISP Query Portal, the RP and CRISP agree to the following:

RP Agrees To:	CRISP Agrees To:
• By end of Q1 2016: o Pilot the Mirth Care Management platform for CRISP for the Upper Chesapeake Care Center; provide rapid feedback on the usefulness of the tool to CRISP.	• By end of Q1 2016: o Implement and deploy the Mirth Care platform for the Upper Chesapeake Care Center; provide training and support to users as required. o Cover the cost of the Mirth Care platform for a period of 2 years with an anticipated start date of April 2016

CRISP Secure Texting

CRISP will implement a secure messaging solution that meets the requirements of the RP.

RP Agrees To:	CRISP Agrees To:
• By the end of Q1 2016 o Provide multiple representatives to score and evaluate potential platforms for secure texting o Identify users / organizations in the RP that will pilot the chosen platform • By the end of Q2 2016 o Provide feedback on the solution including: ▪ Usability ▪ Interoperability ▪ Privacy ▪ Scalability ▪ Community demand	• By end of Q1 2016: o Implement the chosen platform for pilot users and provide training and support as required

Duration

The duration of the MOU shall be until the sooner of either the completion of all of the deliverables within this document or December 31, 2016. CRISP and RP will work in good faith to meet the timelines for each deliverable. The MOU can be changed anytime through written consent of both parties.

Communications regarding changes in the MOU and other correspondence related to this documents shall be coordinated by the following individuals:

Primary CRISP Contact

Name: David Horrocks, President
Phone: 877-952-7477
Email: David.horrocks@crisphealth.org

Primary RP Contact

Name: _____
Phone: _____
Email: _____

Acknowledgement

CRISP

_____

By:

Date:

RP

_____

By:

Date:

MEMORANDUM OF UNDERSTANDING
BETWEEN
UNION HOSPITAL OF CECIL COUNTY, INC.
AND
UNIVERSITY OF MARYLAND UPPER CHESAPEAKE HEALTH SYSTEM, INC.

This Memorandum of Understanding ("MOU") is made this _____ day of _____, 2015, by and between UNION HOSPITAL OF CECIL COUNTY, INC. ("UNION") and UNIVERSITY OF MARYLAND UPPER CHESAPEAKE HEALTH SYSTEM, INC. ("UMUCH").

WHEREAS, UNION is a private, non-profit corporation providing health care services to the community in Cecil County, Maryland and surrounding areas, as well as promoting the overall health of the community;

WHEREAS, UMUCH is a private, non-profit corporation providing health care services to the community in Harford County, Maryland and surrounding areas, as well as promoting the overall health of the community;

WHEREAS, UNION and UMUCH have determined and agreed that it is in their best interest and the best interests of their communities to work collaboratively on Population Health and Health System Transformation and to make an application for Transformation Implementation funding through the ("grant application"); and

WHEREAS, the grant application prepared and approved by UNION and UMUCH is to be submitted to the Health Services Cost Review Commission on or before December 21st, 2015;

NOW, THEREFORE, for and in consideration of the recitals, which are incorporated by reference herein, the mutual covenants contained, it is agreed by and between the parties hereto as follows:

I. Development of Application and Collaborative Model

The purpose of the University of Maryland Upper Chesapeake Health (UMUCH) and Union Hospital of Cecil County (UHCC) Regional Partnership (RP) is to address the medical and social needs of high utilizer patients and those with multiple chronic conditions. The partnership will create the infrastructure for care coordination programs to reduce unnecessary and avoidable hospital utilization and optimize the health of the community. These organizations have previously partnered on a Behavioral Health joint venture that develops new and integrated programs within Cecil and Harford Counties.

II. Roles and Responsibilities

A. General

a. The parties will provide funding for an agreed upon program (or set of interventions) to assist with high risk Medicare and dual-eligible patients. To that end, the parties agree to develop key competencies in concert and share resources, including data analytic capabilities. The parties agree to work closely with community-based partners to find common-workflow solutions and identify shared processes that lead to the achievement of our goals.

b. To ensure the success of the collaboration, the parties will provide administrative oversight (governance) of the program though a Steering Committee, which will consist of four representatives from each party, including the CEO or his designee, the CFO or his designee, the CMO or his designee, and the program director or his designee.

c. The Steering Committee will be responsible for providing oversight of the grant application and any collaborative activities funded by the grant application. Specifically, the Steering Committee will meet at least quarterly to monitor and assess the efficacy of any interventions under the grant application, and to consider any new interventions.

B. UNION

UNION agrees to promote to the success of the collaboration by contributing to the project through time, in-kind contributions and with the use of grant funds. Specifically, UNION agrees to:

a. Operate a High Risk clinic as the launching point for the expanded care coordination effort;

b. Fully participate with the CRISP initiatives outlined in the CRISP-Regional partnership Memorandum of Understanding dated **[insert date]**;

c. Provide human resources, where appropriate, to assist in the development and maintenance of data analysis processes; and

d. Adhere to mutually agreed upon patient workflow and treatment methodologies.

e. Undertake other lawful activities from time to time that are necessary and desirable to promote the aims of the collaboration.

C. UMUCH

UMUCH agrees to promote to the success of the collaboration by contributing to the project through time, in-kind contributions and with the use of grant funds. Specifically, UMUCH agrees to:

a. Operate a High Risk clinic as the launching point for the expanded care coordination effort;

b. Fully participate with the CRISP initiatives outlined in the CRISP-Regional partnership Memorandum of Understanding dated **[insert date]**;

c. Provide human resources, where appropriate, to assist in the development and maintenance of data analysis processes; and

d. Adhere to mutually agreed upon patient workflow and treatment methodologies.

e. Use of Community Health team members to complete the Care Management teams, where appropriate.

f. Undertake other lawful activities from time to time that are necessary and desirable to promote the aims of the collaboration.

III. Financial

a. Any monies received pursuant to the grant application shall be used as enumerated therein and consistent with the collaboration and goals outlined above. The grant application will delineate spending priorities as Community-based care management, shared IT platforms such as care management or secure texting, development of a patient registry and reporting capabilities.

b. It is anticipated the distribution of funding related to the grant application will be delineated to each party in accordance with the HSCRC's guidelines as a percent of each party's net revenue. The initial expenditure of funds, the "must haves" (IT platforms, patient registry, etc.), will be shared 50/50 based on an expected equal benefit of the service(s) to each party. Any and all remaining funds will be expended utilizing the net-revenue-based-rate-increase that accrues to each party and expenditures will be approved by majority vote of the Steering Committee with a minimum of one vote-for-approval from each party.

c. The parties envision that certain interventions may be necessary and mutually desirable to promote the collaborative model and its goals, but may not be adequately funded via amounts received from the grant application. The Steering Committee shall make funding determinations for any interventions that are not adequately funded by the grant application, and shall retain discretion as to the respective contributions and responsibilities of each party. Any affirmative funding determination shall require a simple majority vote, provided, however,

that such majority must include an affirmative vote by at least one representative from each party. Nothing contained herein precludes either party from independently pursuing a desired intervention if the Steering Committee elects not fund it.

IV. Duration

The duration of this MOU shall be one year or December 31, 2016. The MOU can be changed at any time through written consent of both parties.

Communications regarding changes in the MOU will be coordinated by the following individuals:

Primary UNION Contact
Name: _____
Phone: _____
Email: _____

Primary UMUCH Contact
Name: _____
Phone: _____
Email: _____

IN WITNESS WHEREOF, the parties have executed this Memorandum of Understanding by causing the same to be signed on the day and year first above written.

WITNESS/ATTEST:

_____

UNIVERSITY OF MARYLAND UPPER CHESAPEAKE HEALTH SYSTEM, INC.

By:_____
Lyle E. Sheldon
Title: CEO
Date:

UNION HOSPITAL OF CECIL COUNTY, INC.

_____ By:_____

Dr. Ken Lewis
Title: CEO
Date:

UNIVERSITY of MARYLAND
UPPER CHESAPEAKE HEALTH

UNION HOSPITAL

Regional Partnership for Health System Transformation

Appendices

Work Plans

UMUCH / UHCC Regional Partnership Workplan Strategy 1 - Post-Discharge Clinic						
	Planned Completion Date	Status (Not Started, In Process, Completed)	Responsibility	Notes	Key Challenges	Key Successes
Objective 1: Operationalize/ Expand PDC	**Project Length: 90 days**					
Information Gathering (Plan)						
Confirm Inclusion Criteria		Complete	Clark/ Larson/ Lipford			
Confirm LACE Scoring in Meditech		Complete	Lara/ Casteel			
Devopment Process for Patient Enrollment		In Process	Clark/ Larson/Lipford			
Develop direct to CBCM process		In Process	Clark/ Larson/Lipford			
Update Operating Process (Do)						
Communicate updated criteria		Not Started	Clark/ Larson			
Utilize new CRISP Prompt Report		In Process	Clark/ Larson			
Update community program referral guides		Complete	Lipford			
Post new positions as needed		Not Started	Clark/ Larson			
Hire new resources		Not Started	Clark/ Larson			
Conduct training on new process		Not Started	Clark/ Larson			
Conduct training on IT programs (Care Management, Secure Texting, Vivify, Skype)		Not Started	Lara/ Casteel/ Vendor			
Provide training on new Data Warehouse reports		Not Started	Lara/ Casteel/ Vendor			
Review Performance (Check)						
Review Dashboard		Not Started	Operating Committee			
Provide Feedback to CRISP on Prompt		In Process	Clark			
Provide Feedback to CRISP on Care Management		Not Started	Clark/ Larson/ Lipford			
Determine if "right" patients are being referred		In Process	Clark/ Laron/ Ward			
Standardize new process (Act)						
Finalize new policies as needed		In Process	Clark/ Larson			
Update Criteria as needed		In Process	Clark/ Larson			

Work Plans

UMUCH / UHCC Regional Partnership Workplan Strategy 2 - Community-based Care Management						
	Planned Completion Date	Status (Not Started, In Process, Completed)	Responsibility	Notes	Key Challenges	Key Successes
Objective 1: Hire CBCM Teams	**Project Length: 90 days**					
Information Gathering (Plan)						
Develop Job Descriptions	12/1/2015	Complete	Clark/ Larson			
Confirm start dates	1/1/2016	Not Started	Ward/Henry			
Identify temporary resources	1/1/2016	In Process	Ward/Henry			
Identify office locations (including HD & OOA)	1/1/2016	In Process	Ward/ Lipford			
Acquire Resources (Do)						
Post Jobs	2/1/2016	Not Started	Lipford			
Deploy Temporary RN/ CHWs	2/1/2016	Not Started	Lipford			
Interview Candidates	2//2016	Not Started	Clark/Larson/Lipford			
Extend Offers	2/4/2016	Not Started	Lipford			
Acquire CBCM Team IT - Laptops/ Phones	2/5/2016	Not Started	Casteel/Lara			
Determine team regional deployment	2/6/2016	In Process	Ward/Henry			
Review Performance (Check)						
Conduct 90-day evaluations of team	5/1/2016	Not Started	Clark/Larson/Lipford			
Review Candidate Qualifications	5/1/2016	Not Started	Clark/Larson/Lipford			
Standardize new process (Act)						
Adjust Job Descriptions as needed	5/1/2016	Not Started	Clark/Larson/Lipford			
Review regional deployment	5/1/2016	Not Started	Operating Committee			

Work Plans

UMUCH / UHCC Regional Partnership Workplan Strategy 2 - Community-based Care Management						
	Planned Completion Date	Status (Not Started, In Process, Completed)	Responsibility	Notes	Key Challenges	Key Successes
Objective 2: Train CBCM Teams	**Project Length: 120 days**					
Information Gathering (Plan)						
Finalize Workflows	1/1/2016	In Process	Clark/Larson/Lipford			
Confirm referal processes	1/1/2016	In Process	Clark/Larson/Lipford			
Research Training Programs	12/1/2015	Complete	Bands/ Lipford			
Access Budget Impact	12/1/2015	Complete	Ward			
Access impact on timeline	12/1/2015	Complete	Ward			
Identify "Train the Trainer" Opportunity	12/1/015	Complete	Lipford			
Update Buisiness Processes (Do)						
Engage CHW training Program	2/1/2016	Not Started	Lipford			
Complete "Train the Trainer" Course	3/1/2016	Not Started	Bands/ Lipford			
Complete RN Motivation Intv. Training	3/1/2016	Not Started	Bands/ Lipford			
Shadow in PDC	3/1/2016	Not Started	Clark/ Larson			
Conduct PCP Outreach	4/1/2016	Not Started	Lipford			
Review Performance (Check)						
Conduct 90-day review	5/1/2015	Not Started	Lipford			
Review Operating Metrics	5/1/2015	Not Started	Operating Committee			
Standardize new process (Act)						
Augment Training as needed for social & Mental Health Needs			Operating Committee			
Develop PCP marketing tools as needed			Operating Committee			

Work Plans

UMUCH / UHCC Regional Partnership Workplan Strategy 2 - Community-based Care Management						
	Planned Completion Date	Status (Not Started, In Process, Completed)	Responsibility	Notes	Key Challenges	Key Successes
Objective 3: CRISP Care Management	**Project Length: 90 days, then ongoing**					
Information Gathering (Plan)						
Draft Implementation Work Plan	1/15/2016	In Process	Ward/ CRISP			
Update Buisiness Processes (Do)						
Deploy Mirth Care Management	4/1/2016	In Process	Ward/ CRISP			
Provide User Access	4/1/2016	In Process	CRISP			
Review Performance (Check)						
Provide System Feedback on Templates & Display	12/31/2016	Ongoing	Operating Committee			
Standardize new process (Act)						
Tweak Care Management worklow as needed	12/31/2016	Ongoing	Operating Committee			
(Note that a separate Work Plan will be developed in conjunction with B. Neiswender & L. Ferris from CRISP)						

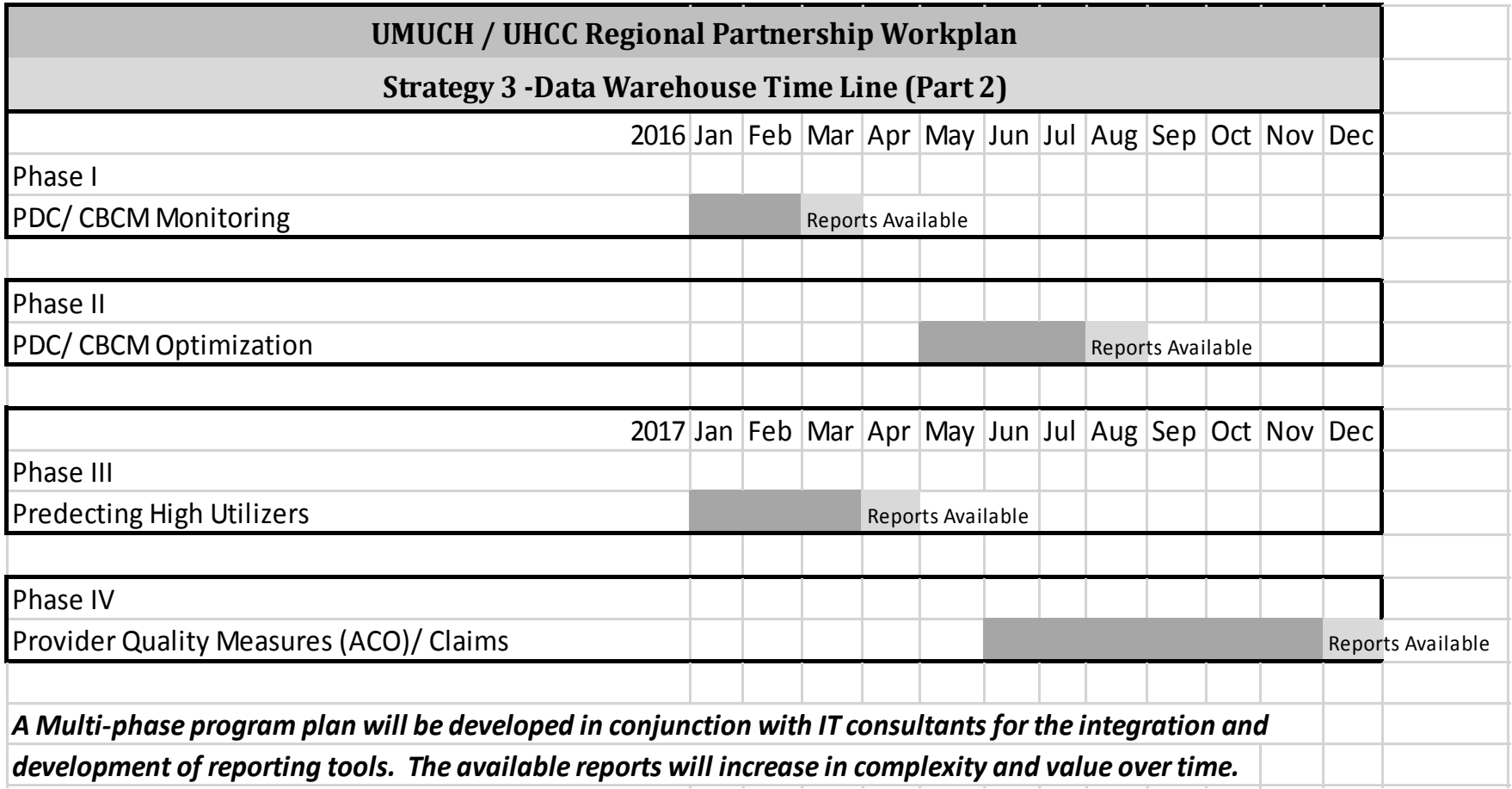
Work Plans

UMUCH / UHCC Regional Partnership Workplan Strategy 3 - Information Technology (Part 1)						
	Planned Completion Date	Status (Not Started, In Process, Completed)	Responsibility	Notes	Key Challenges	Key Successes
Objective 1: Home Monitoring (Vivify)	**Project Length: 90 Days**					
Information Gathering (Plan)						
Expand existing UHCC Contract	1/15/2016	Not Started	Lara			
Determine Future Video Conference Capabilities	12/1/2015	Completed	Lara			
Develop Home Monitoring Patient Criteria	12/1/2015	Completed	Clark/ Larson			
Determine feasibility of connecting to CRISP	2/1/2016	Not Started	Ward/ CRISP			
Update Buisiness Processes (Do)						
Acquire Vivify Kits	2/15/2016	Not Started	Lara			
Test Kits	3/1/2016	Not Started	Lara			
Deploy Kits to PDC	3/1/2016	Not Started	Clark/ Larson			
Provide Training to CBCM Teams	3/1/2016	Not Started	Clark/ Larson			
Review Performance (Check)						
Compare Quality Metrics for patients with & without home monitoring	5/1/2016	Not Started	Ward			
Check wireless data transfer process	5/1/2016	Not Started	Operating Committee			
Standardize new process (Act)						
Evaluate if new populations could benefit from home monitoring	5/1/2016	Not Started	Operating Committee			

Work Plans

UMUCH / UHCC Regional Partnership Workplan Strategy 3 - Information Technology (Part 1)						
	Planned Completion Date	Status (Not Started, In Process, Completed)	Responsibility	Notes	Key Challenges	Key Successes
Objective 2: Teleconsultation (Skype)	**Project Length: 90 Days**					
Information Gathering (Plan)						
Create Teleconsult Criteria	12/1/2015	Completed	Clark/ Larson			
Create Telconsult Notification Process	12/15/2015	In Process	Clark/ Larson			
Identify Tele Consult Software	12/1/2015	Completed	Lara/ Casteel			
Update Buisiness Processes (Do)						
Acquire Surface Tablets	2/15/2016	Not Started	Casteel			
Install Skype for Business	3/1/2016	Not Started	Catseel			
Acquire MiFI hot Spots	3/1/2016	Not Started	Casteel			
Test Connectivity	3/1/2016	Not Started	Casteel			
Train CBCM Teams	3/1/2016	Not Started	Casteel			
Review Performance (Check)						
Track Use of Tele Consult	3/15/2016	Not Started	Clark/Larson			
Determine Hospital Utilization post Teleconsult	3/15/2016	Ongoing	Operating Committee			
Standardize new process (Act)						
Evaluate patient critera as needed	5/1/2016	Not Started	Operating Committee			
Identify additional uses for telehealth	5/1/2016	Ongoing	Operating Committee			

Work Plans


UMUCH / UHCC Regional Partnership Workplan
Strategy 3 -Data Warehouse Time Line (Part 2)
2016 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Phase I
PDC/ CBCM Monitoring
Reports Available
Phase II
PDC/ CBCM Optimization
Reports Available
2017 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Phase III
Predecting High Utilizers
Reports Available
Phase IV
Provider Quality Measures (ACO)/ Claims
Reports Available
A Multi-phase program plan will be developed in conjunction with IT consultants for the integration and development of reporting tools. The available reports will increase in complexity and value over time.

Dash Board

UMUCH-UHCC Regional Partnership Dashboard

Metric Type	#	Metric	Data Month	Target	Current YTD	Prior Month YTD	Vs. Target	Vs. Prior Month Change
Primary Outcome	**1**	**Hospital Utilization**	**Jan**	**11.50%***	**11.80%***	**11.97%***	**-3.1%***	**1.7%***
Outcome Leading Indicator	2	30-Day Readmissions (All Cause)	Jan					
	3	30-Day ED Revisits	Jan					
	4	30-Day Readmission to Observation	Jan					
	5	Readmit % from SNF within 48 hrs	Jan					
	6	Average Hospital Charges	Jan					
	7	90 Day Pre/Post Hospital Utilization	Jan					

Meeting Target **Below Target** **Needs Attention**

Dash Board

UMUCH-UHCC Regional Partnership Dashboard								
Metric Type	**#**	**Metric**	**Month**	**Target**	**Current YTD**	**Prior Month YTD**	**Vs. Target**	**Vs. Prior Month Change**
Process Leading Indicator	1	% PDC/CBCM Referrals	Jan					
	2	CRISP ENS Alerts	Jan					
	3	% Patients with Care Plan in CRISP Mirth Care	Jan					
	4	% Reduction in EMS transport for High Risk Patients	Jan					
	5	% Patients Referred to PDC	Jan					
	6	Patient Satisfaction Survey	Jan					

Meeting Target **Below Target** **Needs Attention**

Performance Improvement Continuing Medical Education (PI CME)

- **Stage A (5 CME Credits)**: Learning from current practice performance assessment
  - Assess current practice using the identified performance measures. Analyze the collected data to determine causes of variations from any desired performance and identify appropriate intervention(s) to address these.
- **Stage B (5 CME Credits)**: Learning from the application of PI to patient care
  - Implement the intervention(s) based on the results of the analysis in Stage A using suitable tracking tools.
- **Stage C (5 CME Credits)**: Learning from the evaluation of the PI CME effort
  - Re-assess and reflect on performance in practice measured after the implementation of the intervention(s) in Stage B, by comparing the assessment done in Sate A and using the same performance measures. Summarize any practice, process/or outcome changes that resulted from conducting the PI CME activity.
- **If all three stages are completed, the physician receives an additional 5 CME Credits for a total of 20 CME Credits.**

MedChi will assist in establishing appropriate tracking to ensure CME requirements are met