HOLYOKE MEDICAL CENTER, INC.

Delivery System Transformation Initiatives Proposal for the Massachusetts Section 1115 Waiver Demonstration Years 15 - 17

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Executive Summary

Holyoke Medical Center (HMC) is pleased to submit the Medical Center's three-year Delivery System Transformation Initiative (DSTI) plan pursuant to the DSTI program authorized under the Commonwealth of Massachusetts' MassHealth 1115 Demonstration waiver as approved by CMS on December 20, 2011. HMC is the foundation for the local health system serving the City of Holyoke and several surrounding cities and towns and is the largest provider of inpatient and outpatient healthcare services to one of the poorest communities in Massachusetts. As such, HMC plans to leverage the DSTI program to begin building the foundational elements necessary for creating an integrated safety-net healthcare system that is effectively equipped to provide the highest possible level of clinical quality and improve the health of the communities it serves.

HMC is committed to a delivery system transformation and looks forward to working collaboratively with its affiliated healthcare organizations under the parent of Valley Health Systems, as well as the Commonwealth, to create a transformed delivery model that encourages citizens to take responsibility for wellness behaviors while ensuring the highest possible level of clinical quality for the Holyoke community.

Five-Year Vision of Delivery System Transformation & Key Challenges

It is the vision of HMC and the affiliated healthcare organizations under the parent Valley Health Systems, Inc., in conjunction with its community providers, to develop a roadmap for a healthcare system where all members of that system have integrated clinical programs, disease management abilities, and access to methodologies which help patients improve their health outcomes. HMC envisions an integrated health system that forges linkages between its affiliated sister organizations, Western Mass Physician Associates, Visiting Nurses Association and Hospice, River Valley Counseling Center and Holyoke's federally-funded Holyoke Health Center and a variety of local long term care and rehabilitation facilities. Ultimately the goal in establishing these strategic connections along the continuum of care is to leverage the skills of the teams of healthcare professionals, specially trained in a new model of collaborative health care that will help patients to identify specific wellness activities and/or implement treatments that will optimize their personal health status.

HMC believes that this vision will position primary care providers as the best leverage point to guide patients through their complete health care plans. The primary care provider can build a personal (and knowledgeable) relationship with his/her patients. With a robust and pro-active primary care function and the required infrastructure in place, HMC may see a decline in the number of chronic disease admissions, and a decline in the number of preventable readmissions for chronic disease. Under this transformed model of care, these chronic conditions will be effectively managed either at home or in the primary care setting, which will lead to meeting elements of the Triple Aim of providing better care for individuals, better health for populations, and lower per capita costs.

HMC DSTI Plan

HMC's DSTI Plan prioritizes six critical projects it believes will help it meet the organization's five-year vision. The projects fall under four categories as outlined in the Commonwealth's Master DSTI Plan, as approved by CMS.

Holyoke Medical Center, working in collaboration with its affiliated sister organization Western Mass Physician Associates (WMPA), under the parent organization Valley Health Systems, plans to **develop a structure for certification of Patient Centered Medical Home (Project 1.1)** at the WMPA affiliated primary care and pediatric sites, mirroring the collaborative work HMC has been engaged in at the Holyoke Health Center in partnership with the STAAR program. The primary care and pediatric WMPA practices consists of three locations. During the waiver demonstration period HMC will work with the physicians, administration and staff at those sites to evaluate and measure the practices' capability to move forth with Patient Center Medical Home and new patient centered care delivery and potential payment models. Via gap analysis HMC will identify weaknesses or roadblocks to certification and will assist the practices in closing those gaps for readiness of certification to accomplish a minimum of Level 1 certification within the five year strategic plan period.

Building on the Patient Centered Medical Home work, HMC will develop and implement a **Health Information Exchange (Project 1.2)** between the hospital and its WMPA affiliated providers. This bidirectional information exchange will allow the physician practices to access longitudinal records of their patients. Within the five year plan HMC will expand that exchange to include non-Valley Health System affiliated practices such as Holyoke Health Center, other primary care physician practices, and local long term care and rehabilitation facilities. This will enhance the overall patient experience, reduce costs and improve the quality of care of HMC's very challenged patient population.

The HMC patient population is one of the lowest income populations in the Commonwealth. The population has a high prevalence of chronic disease which includes Heart Failure, Chronic Obstructive Pulmonary Disease, Diabetes, Hypertension, mental health and substance abuse, as well as challenges of access to healthcare. Tying in with the work of the Patient Centered Medical Home and the Health Information Exchange HMC, again with the assistance of the WMPA practices, will establish a **Chronic Disease Registry (Project 2.1)**. This Chronic Disease Registry will begin tracking patients with multiple chronic disease, but most prevalently Heart Failure and Chronic Obstructive Pulmonary Disease which are the leading 30 day readmission chronic diseases at HMC, as well as nationally. Other chronic diseases including depression, Diabetes, hypertension, etc. will also be entered into the Chronic Disease Registry throughout the five year vision. The Registry will allow for early identification of high risk or complex patients by identifying risk factors such as polypharmacy, little support systems, mental health issues, and /or more than one chronic illness for providers in the Patient Centered Medical Home practices who will respond to those identified risk factors with appropriate continuity of care treatment plans.

To utilize the information that will be used in both HMC and WMPA Patient Centered Medical Home model practices obtained through the Health Information Exchange and the Chronic Disease Registry, HMC will implement methodology for the **Improvement of Management of Patients with Chronic Disease (Project 2.2A and 2.2B)** as identified as inpatients at HMC . The chronic diseases of Heart Failure and Chronic Obstructive Pulmonary Disease will be concentrated on during our DSTI waiver project and expanded within the five year vision to include researched best practices for depression, diabetes, hypertension, etc. Utilizing the work of the STAAR program and the Institute of Healthcare Improvement, as well as other nationally recognized experts in chronic disease management, these programs will be initiated during the first few years of DSTI waiver program.

Utilizing the information obtained again to the care and treatment of chronic disease patients both at HMC and at the WMPA practices, and with information that flows through the Health Information Exchange into the Chronic Disease Registry, HMC will develop and implement a **Data Warehouse (Project 3.1)** with appropriate tools and software to extract data for analysis and stratification of disease status for use at both HMC and with its affiliated providers. Clinical outcomes, costs, and efficiency will be studied from data extracted through the Data Warehouse.

Through the five year vision, increased information about HMC's patient population health will be utilized by partnering with other community providers, both affiliated with Valley Health Systems, i.e, Visiting Nurse Associates and Hospital, River Valley Counseling Center, and those not affiliated with Valley Health Systems such as Holyoke Health Center, various long term care and rehabilitation facilities, pharmacies and private providers. HMC will work with and engage the medical staff, Physician Hospital Organization (PHO) and unaffiliated providers on developing a community-wide strategy to expand the use of integrated health information and the impact it may have on the provision of healthcare in the community. Educational sessions will be held to educate providers on such things as the PCMH model and the benefits of the HIE, data sharing, privacy and security concerns and regulations.

HIE Policies and Standards will be developed to address protected health information as defined by the Health Insurance Portability and Accountability Act (HIPAA) Standards for Privacy of individually identifiable Health Information, 45 C.F.R. Part 160 and Part 164, Subpart E, and the HIPAA Security Standards, 45 C.F.R. Part 160 and 164, Subpart C and will be part of a Participation Agreement with HMC.

It is through these five integrated projects that Holyoke Medical Center will help lead a transparent, integrated delivery system in the City of Holyoke and its surrounding communities that utilize our services thus producing delivery system transformation that meets the elements of the triple aim.

Project Title	Description	Three Year Goals
Category 1: Further Development of a Fully Integrated Delivery System:		
1.1 Develop a Patient Centered Medical Home for HMC Affiliated Primary Care Practices	Develop a transparent, integrated healthcare system that keeps the patient the center of the system	HMC is seeking to increase patient and physician satisfaction, develop financial and organizational models to support practices adopting the Patient Centered Medical Home (PCMH) model throughout the system. HMC will educate its leadership staff and physicians on the PCMH concepts. Perform a Gap analysis to determine affiliated practices readiness for PCMH. Develop Action plans to close the Gaps discovered, concentrating on the must pass measures of the NCQA PCMH model. HMC will seek to increase access, continuity of care and satisfaction for all patients within the system and achieve sustainable changes in care delivery.
1.2 Establish a Health Information Exchange (HIE) Between HMC and Its Affiliated Providers	Identify and implement a bi-directional health information exchange to allow physician practices access to a longitudinal record of their patients' care through a web based portal or through a direct interface into their practice EMR.	Adopt an open standards interoperability technology solution that will be built on sound principles and processes to address HIE workflows providing participating Providers in the Holyoke Medical Center system with shared patient information from different systems in a real time fashion thus enhancing the patient experience, reducing cost, and improving the quality of care of the patient population.
Category 2: Improved Health Outcomes & Quality:		
2.1 Establish a Chronic Disease Registry	A chronic disease registry will be developed and implemented to follow and provide the strongest level of care for HMC's chronic disease patients	The chronic disease registry will begin tracking patients with diagnosis of Heart Failure (HF) and expand to Chronic Obstructive Pulmonary Disease (COPD) in subsequent years; demonstrate a reduction in readmission rate each year (2013 through 2014) for the chronic diseases monitored by the registry

Project Title	Description	Three Year Goals
2.2A Improve Management of Patients with Heart Failure/Expand Chronic Disease Care Management Models	Best practices will be established and chronic disease management processes will be in place to better care and serve those patients in our system	To decrease the 30-day readmission of Heart Failure patients to HMC, while increasing the coordination of care across the continuum to identify patients at risk and provide specific education which will empower the patient to self-manage. Families and caregivers will be included.
2.2B Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models	Best practices will be established and chronic disease management processes will be in place to better care and serve those patients in our system	To decrease the 30-day readmission of Chronic Obstructive Pulmonary Disease patients to HMC, while increasing the coordination of care across the continuum to identify patients at risk and provide specific education which will empower the patient to self-manage. Families and caregivers will be included.
Category 3: Ability to respond to statewide transformation to value-based purchasing and to accept alternatives to fee-for-service payments:		
3.1 Establish an Enterprise-wide Strategy for Data Management and Analysis	Development of a data warehouse and implementation of appropriate tools/software to extract data for analysis and stratification to allow HMC and its affiliated providers to follow their patients, manage clinical outcomes, improve efficiency, and manage risk.	The implementation of data warehousing system to allow for concurrent and more robust real time data reporting and analysis on both patient and operational outcomes.
3.2 Participate in a Learning Collaborative	Participation in learning collaborative will provide a forum for eligible DSTI safety net providers to learn from other providers that share similar goals and to capitalize on potential synergies in their efforts.	Through this project, HMC will join an existing learning collaborative – such as the Brookings-Dartmouth ACO Learning Network or another ongoing learning collaborative that aligns with DSTI goals – or will develop a new learning collaborative designed to support its transformation goals. To be developed in 2013

Project Title	Description	Three Year Goals
Category 4: Common Measures:		
4.1: Care Transitions Measure Set (CTM-3) 4.2: Patients who reported that staff "Always" explained about medicines before giving it to them. 4.3: Patients at each hospital who reported that YES, they were given information about what to do during their recovery at home.	Improve the overall quality of the US health system by making health care more patient -centered, reliable, accessible, and safe. These goals, set forward by the Institute of Medicine, are important domains for assessing the effectiveness of care improvements. In the context of the DSTI program, there is a focus on both the quality and experience of patient care. One area of increasing national attention has been a focus on improvement of care transitions between providers or settings of care. Given the importance of examining patient care transitions and their effect on patient outcomes, three Common Measures, utilizing patient experience of care measures from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey focus on whether patients' felt they had a good understanding of their medications and care needs post-discharge. Medication adherence and errors are a leading source of unnecessary emergency and acute care; therefore, it is an area of shared focus	
4.4: ED Wait Time: Door to Diagnostic Evaluation by a Qualified Medical Personnel	Reducing the time patients remain in the emergency department (ED) can improve access to treatment and increase quality of care. Reducing this time potentially improves access to care specific to the patient condition and increases the capability to provide additional treatment. Overcrowding and heavy emergency resource demand have led to a number of problems, including prolonged patient waiting times, increased suffering for those who wait, rushed and unpleasant treatment environments, and potentially poor patient outcomes.	
4.5 Pneumonia Immunization 4.6 Influenza Immunization 4.7: Percent of discharged patients under age 75 who were hospitalized for Chronic Obstructive Pulmonary Disease (Ambulatory Sensitive-Condition Admissions Measure) 4.8: Percent of discharged patients under age 75 who were hospitalized for Congestive Heart Failure (Ambulatory Sensitive-Condition Admissions Measure 4.9 Low Birth Weight Rate: number of low birth weight infants per 100 births	Improve the health of the population by supporting proven interventions and enhancing the quality of care delivered. Two CMS Inpatient Quality Reporting/Joint Commission measures report on proven immunization interventions that can improve the health of hospitalized populations following discharge—preventing subsequent care interventions. Two other ambulatory-sensitive measures examine acute admissions for chronic obstructive pulmonary disease (COPD) and congestive health failure (CHF) patients—two patient populations of particular concern given their chronic care needs. Measure that looks at maternal and child health—examining the incident of low-birth weight children, a leading determinant of newborn health especially important for Medicaid populations.	

Project Title	Description	Three Year Goals
4.10 Hospital 30-day, all-cause readmission rate to the index hospital following a hospitalization for all patients 18 and older (not risk adjusted)	Preventable readmissions are an area of nationwide focus, both for their cost and health implications, but also because many readmissions are the result of poor care hand-offs and lack of care coordination post discharge. Similarly, many pediatric asthma emergency department visits are potentially avoidable with concerted outpatient management and care plans; therefore, an ambulatory-care sensitive pediatric asthma measure, relevant to Medicaid populations, has been included. A measure of early elective delivery examines a practice of care for which the evidence-base suggests can lead to unnecessary newborn complications and health care costs.	
4.11: Percent of Emergency Department visits for children age 18 or less with a primary diagnosis of asthma--Ambulatory Sensitive-Condition		
4.12: Percent of patients with elective vaginal deliveries or elective cesarean sections at greater than or equal to 37 weeks and less than 39 weeks of gestation completed		
Category 4 – Population-Focused Improvements: Hospital Specific		
4.1 Identify the percent of patients with a minimum of one chronic disease in each WMPA adult and pediatric practice	Western Mass Physician Associates, the primary care, pediatric, and ob/gyn physician practices affiliated with Valley Health Systems and sister organization, Holyoke Medical Center, see nearly 20,000 patients in its practices. Many of those patients have a minimum of one chronic disease, if not more. This project will identify those patients with a minimum of one chronic disease and, through our electronic health record, electronic data exchange and data warehouse, enter those patients into the chronic disease registry to eventually develop a specific plan of care to deal with those chronic diseases. Heart Failure and Chronic Obstructive Pulmonary Disease will be the two diseases concentrated on in this waiver period	Identify number of patients with a minimum of one chronic disease in the Western Mass Physician Associates practices to be entered into the chronic disease registry and develop best practice treatment plans for those patients.

Project Title	Description	Three Year Goals
4.2 Identify percent of patients given referral for specialist treatment of a chronic disease and turnaround time of referral report	Many of the patients within the Western Mass Physician Associates and Holyoke Medical Center treatment areas are referred for specialist treatment of their chronic disease, i.e., pulmonary specialist, cardiologist, etc. It is felt that some of those patients to not keep those referrals and/or are loss within the system. The reporting time for those referrals range dramatically depending on the location of the specialist referred to. This project will identify patients who are referred and determine what percent keep their appointments and the turnaround time for reports being sent back to the primary care physician.	Identify: 1. The panel of patients who are sent for referral 2. Identify those specialists referred to 3. Develop an expected turnaround time and any gaps in that turnaround time for referral and/or report return
4.3 Establish baseline average wait time for third next available appointment for the WMPA primary care and pediatric practices	Average third next available appointment wait time for the practice is calculated on a weekly basis by looking at providers' schedule and counting the days until their next third available appointment. An average across providers is calculated each week. The practices average is reported every six months to determine if there is an improvement in access to primary care services, primarily for our highest risk patients.	A primary goal for success in a patient-centered medical home model and for maintaining and improving population health is to ensure adequate and timely access to primary care services. This measure will allow each office to monitor the success of the implementation of other initiatives related to improving access to care.
4.4 Measure the percent of 30 day readmits to hospital of heart failure patients	Heart Failure is one of the leading causes of 30 day readmissions at HMC, therefore a project to improve the management of HF patients will help focus on those diagnoses providing real time support and best practices while patients are at HMC, and improve handoffs outside the institution to their primary care offices, Visiting Nurses Association, or a skilled nursing facility.	Identify and reduce the number of patients with heart failure readmitted to the hospital using the electronic health exchange, chronic disease registry and data warehouse.

Project Title	Description	Three Year Goals
4.5 Measure the percent of 30 day readmits to hospital of chronic obstructive pulmonary disease patients	Chronic Obstructive Pulmonary Disease is one of the leading causes of 30 day readmissions at HMC, therefore a project to improve the management of COPD patients will help focus on those diagnoses providing real time support and best practices while patients are at HMC, and improve handoffs outside the institution to their primary care offices, Visiting Nurses Association, or a skilled nursing facility.	Identify and reduce the number of patients with chronic obstructive pulmonary disease readmitted to the hospital using the electronic health exchange, chronic disease registry and data warehouse.
4.6 Identify patient with a diagnosis of HF or COPD who are referred to attend smoking cessation counseling from a certified smoking cessation counselor.	COPD is usually caused by smoking and unless treated in a proactive way the disease progressively worsens and limits the ability of the person who has the disease to perform normal activities. According to the Massachusetts Dept of Public Health, *Quitworks Program: Tobacco Intervention Tips,* counseling, along with pharmacotherapy, have additive effects to the patient trying to quit smoking.	Increase percentage of baseline patients with HF or COPD who are referred to attend smoking cessation counseling from a certified smoking cessation counselor.

Project Title	Description	Three Year Goals
4.7 Measure percent of identified "high risk" for readmission patients who are scheduled a follow up visit prior to discharge using STAAR Initiative Program tool for identifying high risk patients for readmissions	Certain factors impact the assignment of high risk including certain diagnosis such as COPD and CHF, socioeconomic status, level of support in the community and at home, mental health diagnosis, and poly pharmacy. Preventive interventions can improve the outcomes of this population and decrease the need for further care interventions. Early post discharge follow up for chronically ill patients had been tested and found to be beneficial according to the Institute for Healthcare Improvement, *How-To-Guide: Improving Transitions from the Hospital to Post Acute Care Settings to Reduce Avoidable Rehospitalizations, May 2011.*	Improve the health of the population by supporting proven interventions and enhancing the quality of the care given. Identifying level of risk is one way to improve discharge planning for the especially high risk for readmission patient , and establishing that level of risk on admission is important .
4.8 Measure the percent of COPD patients who go home with their inhaler if it is "continued" on their medication discharge instructions.	Studies have shown that when the COPD patient participates in the self management of their disease, it may reduce the burden of their disease including compliance with inhaled medications and technique. One of the contributing factors specific to the COPD patient at HMC is the poverty and low health literacy of our patients. Access to medications and transportation are often factors for what can be defined as non compliance with a treatment plan .	Insuring that the COPD patient is receiving hands on education from a trained professional while an inpatient, using the "teach back method" on the administration of their prescribed inhaler and allowing them to take the inhaler home (if prescribed) to start treatment promptly and effectively will undoubtedly decrease the exacerbation of this population.

Project Title	Description	Three Year Goals
4.9 Measure timely handover communication percentage of times critical information is transmitted at the time of discharge to the next site of care i.e., home health, LTC, rehab and/or PCP office)	According to *IHI How-To-Guide: Improving Transitions from the Hospital to Post Acute Care Settings to Reduce Avoidable Rehospitalizations,(2011) and Eric Coleman, M.D., originator of the Care Transitions Coleman Model,* assigning a level of risk should occur on admission, and an enhanced, customized, discharge plan based on the level of risk for readmission should be implemented. One aspect of this plan for high risk patients includes a follow up appointment to be made prior to discharge. Communicate with agencies early if referral for home care, skilled facility or a transition coach is indicated.	Meet the patient's identified needs such as ability to obtain medications, transportation, level of support are all part of an enhanced individualized discharge plan

Background

Community Context

HMC is the largest provider of inpatient and outpatient healthcare services to the poorest community in Massachusetts.

In addition, Hampden County, where HMC is located, was rated the least healthy county in the state by the Robert Wood Johnson Foundation, whose research concluded that poor health is closely related to poverty. Approximately 73% of HMC's patients participate in Medicaid, Medicare, are covered by other government payers, or are uninsured or result in bad debts. Due to its payor mix, HMC does not receive sufficient payments to cover actual operating costs or make significant infrastructure improvements. Despite these challenges, HMC is ranked among the lowest cost and most efficient hospitals in Western Massachusetts as reported in the Massachusetts Division of Health Care Finance and Policy's "Massachusetts Health Care Cost Trends 2010 Final Report, April 2010."

HMC is the foundation for the local health system, serving the City of Holyoke and several surrounding cities and towns. HMC provides medical and surgical, obstetrical, oncology, and psychiatric inpatient services in addition to a full array of outpatient diagnostic and therapeutic services. Statistics in 2011 show approximately 240,000 outpatient visits; 30,531 inpatient days; 6,435 inpatient discharges and 45,816 Emergency Room visits. HMC is the only provider with a 24/7 Emergency Department within the City of Holyoke, and the only acute care hospital in Holyoke with a 20-bed inpatient psychiatric unit. The psychiatric unit is supported by HMC's Behavioral Health Department including an Intensive Outpatient Program and Partial Hospitalization Program. HMC's Emergency Department has a 4-bed Behavioral Health Pod which gives behavioral health patients an area which allows for a quieter environment and less stimulation. To support the acute Psychiatric Unit in the Emergency Department, HMC has also contracted with Behavioral Health Network to provide 24/7, 365 day on-site behavioral health assessments.
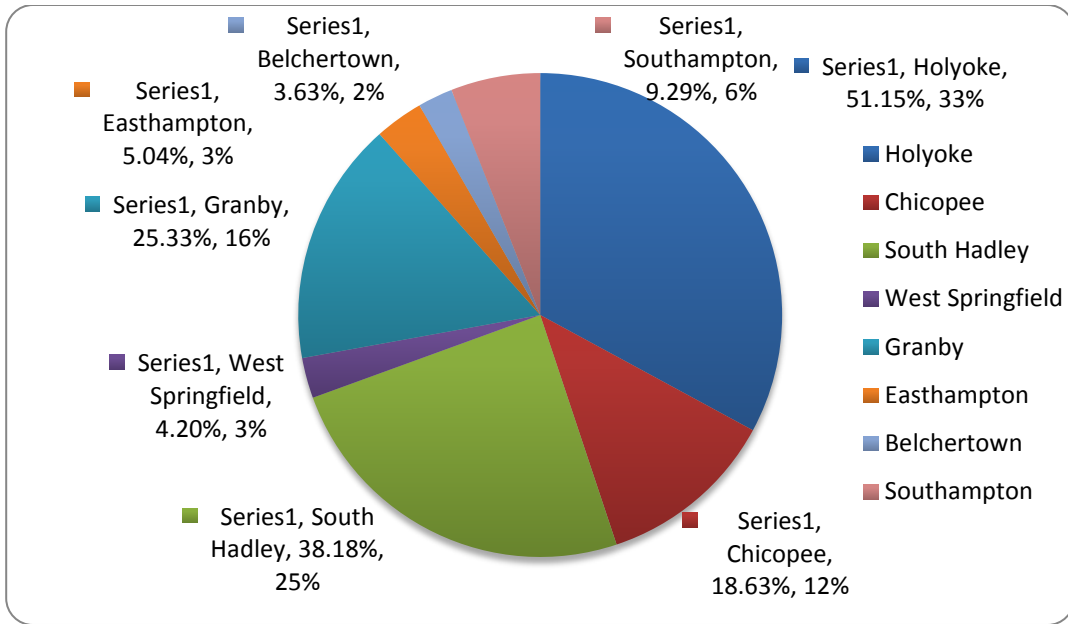
A shortage of physicians in the Holyoke area has created significant financial stress for HMC. In recent years, due to HMC's payor mix, HMC has been forced to begin moving towards an employed physician model to ensure that local citizens have reasonable access to medically appropriate care within the hospital, as well as reasonable access to medical professionals in an outpatient office setting through its related organizations Western Mass Physician Associates, Holyoke Visiting Nurses Association, and River Valley Counseling Center. Examples of this include our employed Anesthesiologists, General Surgeons, Orthopedic Surgeons, Hospitalists, and Pathologists. If HMC did not employ these specialists, access to acute care services such as emergency, surgery and inpatient medical care would be extremely limited or nonexistent. It should be noted that HMC's employed Hospitalist program provides medical coverage for 100% of inpatients that are referred to HMC from the Holyoke Health Center (an unaffiliated Federally Qualified Health Center located in downtown Holyoke).

HMC and its affiliates continue to be one of the very few health resources that are available to citizens in Holyoke, which has a high poverty rate. The local shortage of physicians has created stresses within HMC, and it has generated significant challenges within its affiliate, Western Mass Physician Associates, a multi-physician practice. HMC and its corporate affiliates are the largest non-government employer in Holyoke, with nearly 1,800 employees and an annual operating budget of $122 million with over $90 million in payroll. A former Mayor of Holyoke attributed 20% of the city's economic engine to HMC and its affiliates.

HMC Mission

HMC's mission is to serve the health needs of the community in a compassionate, high quality, and efficient manner. To this end, HMC shall:

- Provide compassionate care to all whom it serves and commitment to cultural diversity in our programs and workforce, and the development of cultural competencies in our workforce so that we may better serve our patients;
- Identify and serve those needs which are prevalent and substantial in the community as a whole or within major population groups, and which can be adequately met by the provision of basic primary and secondary health care services;
- Provide information, education, and expertise to our community in order to promote the general health of its citizens;
- Provide an environment of excellence and growth in which health care professionals can use their skills and abilities to the fullest extent possible;
- Provide competitive wages and benefits, as well as safe and dignified working conditions, for all employees;
- Ensure financial responsibility in the operation of the Medical Center in order to guarantee the future viability of our mission;
- Provide a formal, public, and ongoing program of community benefits, in cooperation with community individuals and organizations, to improve the health status of the public including especially the medically and economically vulnerable.

Population Description

HMC is a High Public Payer Disproportionate Share acute care urban community hospital. HMC is a critical component of the local public health system—serving several surrounding cities and towns, and is the provider of last resort for its constituency who are older, poorer and sicker than other populations state-wide. The City of Holyoke presents alarming demographic and health statistics. The rates for several serious diseases/conditions and economic issues in the greater Holyoke area are significantly higher than in the rest of the state:

- Per capita income is 61% below the state average
- Adults over 65 are 109% above the state average
- AFDC Medicaid recipients are 383% above the state average
- Hispanic persons represent 591% above the state average
- Births to adolescent mothers are 356% above the state average
- Gonorrhea is 278% above the state average
- AIDS/HIV related deaths are 773% above the state average
- Cardiovascular disease deaths are 120% above the state average
- Alcohol and drug related hospital discharge rate is 246% above the state average

Source: MA Department of Public Health MassCHIP Health Status Indicators Report

Some of the essential community services provided to this disadvantaged population include behavioral health and substance abuse treatment; prenatal and maternity services; Women's services; HIV/AIDS programs; and community outreach and health education programs. Patients utilizing these essential services would not be able to seek healthcare outside of the community primarily due to the lack of available and reliable public transportation. In addition to working with

its affiliates, HMC works collaboratively with many community agencies such as Holyoke Health Center, Holyoke Geriatric Authority, Behavioral Health Network and other similar organizations.

In order to meet the needs of the Hispanic/Latino population, HMC established a Community Outreach Department which comprises a dynamic bilingual/bicultural group that educates the organization about cultural competence. HMC has a team of formally trained medical interpreters and certified nationally-recognized language telephonic and video conferencing services to provide competent linguistic services to its Limited English Proficiency patients. In addition, the Community Outreach Department Manager is actively involved in numerous internal and external committees, task forces, coalitions and health commissions to keep informed about needs surfacing in the community.   This Department Manager and staff's expertise are frequently sought for the promotion of cultural proficiency and competence not only within the organization, but also by outside organizations, both local and statewide. HMC's Interpretive Services Department also provides free transportation to many local residents with healthcare needs who have no other access to public or private transportation.

Health System Description

HMC is a member of Valley Health Systems, Inc. which includes Western Mass Physician Associates, River Valley Counseling Center and Holyoke Visiting Nurse Association.

- *HMC* is an acute care urban community hospital located in the City of Holyoke in Hampden County, Massachusetts, with 203 beds and 10 bassinets. HMC was established in 1893 with funding from committed business leaders to take care of sick and poor citizens. Since that time, HMC has provided continuous healthcare leadership and quality care to the local and surrounding communities. Citizens of Holyoke, Chicopee, Easthampton, Granby, South Hadley, Southampton, and West Springfield make up its primary service area. HMC has received national recognition for high quality services, ranging from certification as a Breast Cancer Center to awards for consistently superior care and treatment of stroke patients. HMC recently expanded the model of employed physicians to improve its community's access to under-represented medical specialists. The addition of physicians who specialize in gastroenterology, general surgery, orthopedic surgery, and rheumatology has increased access for local citizens; it has also created additional expense for HMC.

- *Western Mass Physician Associates* is the corporate affiliate that houses much-needed primary care physicians and mid-level providers, in outpatient office settings. Within this affiliate, the organization is able to offer needed services in adult medicine, obstetrics & gynecology, midwifery care and pediatrics; this affiliate receives financial support from HMC annually for routine operating expenses. Absent the services offered through Western Mass Physician Associates, patients in the local community would have little to no access to these important primary care and wellness services.

- *River Valley Counseling Center* is the corporate affiliate that focuses on outpatient behavioral health services for the most highly vulnerable members of our society. River Valley Counseling Center is deeply embedded within the inner-city community, with locations in Holyoke,

Chicopee, and Springfield. Patients with dual-diagnoses (typically addiction disorders combined with mental illness), find help and hope via the various treatment programs offered at River Valley Counseling Center's sites.

- *Holyoke Visiting Nurse Association* is the corporate affiliate that specializes in in-home care services and Hospice care.   The VNA works closely with discharge planners at HMC (and other inpatient facilities in western Massachusetts) to ensure that safe and effective health care is delivered after a patient is discharged from an acute care facility.

Health Information Technology Initiatives Supporting System Transformation: HMC has leveraged its HIT investments to transform health care delivery, maximize care coordination and improve overall quality, patient safety and patient experience of care. The WMPA practices have a fully developed electronic medical record across all their ambulatory sites. HMC has fulfilled its attestation for Meaningful Use, Stage 1. The majority of the WMPA practices have also fulfilled Meaningful Use Stage 1 requirements. Currently there are approximately 50 community physician practices with different stages of functional EHR, including the six WMPA sites.

HMC also participates in a Physician Hospital Organization (PHO), Valley Health Partners, with primary care and specialty members of its medical staff.

VALLEY HEALTH SYSTEMS, INC.
ORGANIZATIONAL CHART

BOARD OF DIRECTORS

PRESIDENT & CEO
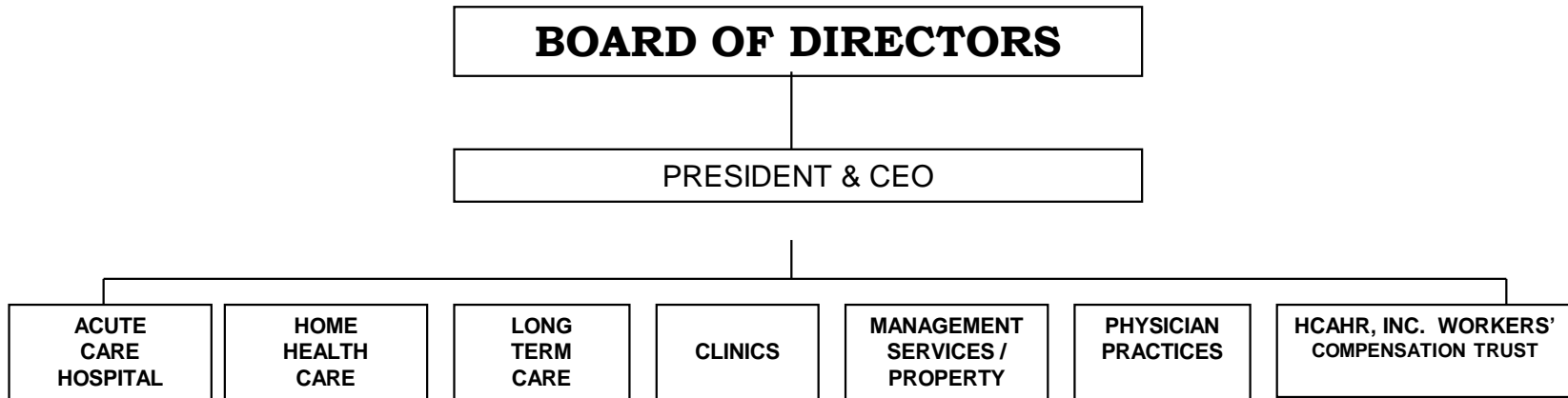
ACUTE CARE HOSPITAL	HOME HEALTH CARE	LONG TERM CARE	CLINICS	MANAGEMENT SERVICES / PROPERTY	PHYSICIAN PRACTICES	HCAHR, INC. WORKERS' COMPENSATION TRUST
Holyoke Medical Center, Inc.	Community Health Foundation of Western Massachusetts, Inc. Holyoke Visiting Nurse Association, Inc.	Falls Nursing Home (501C3) Summerfield, Inc.	River Valley Counseling Center, Inc.	H-C Management Services, Inc.	MassWEST Services, Inc. Western Mass Physician Associates, Inc. - Chicopee Medical Center - Holyoke Assoc. In Internal Medicine - Midwifery Care of Holyoke - Western Mass OB/GYN - Western Mass Pediatrics	

Five Year Vision

It is the vision of Holyoke Medical Center and the affiliated healthcare organizations under the parent Valley Health Systems, Inc., in conjunction with its community providers, to develop a roadmap for an integrated healthcare system where all members of that system have interactive clinical programs, disease management abilities, and access methodologies to help patients improve their health outcomes.
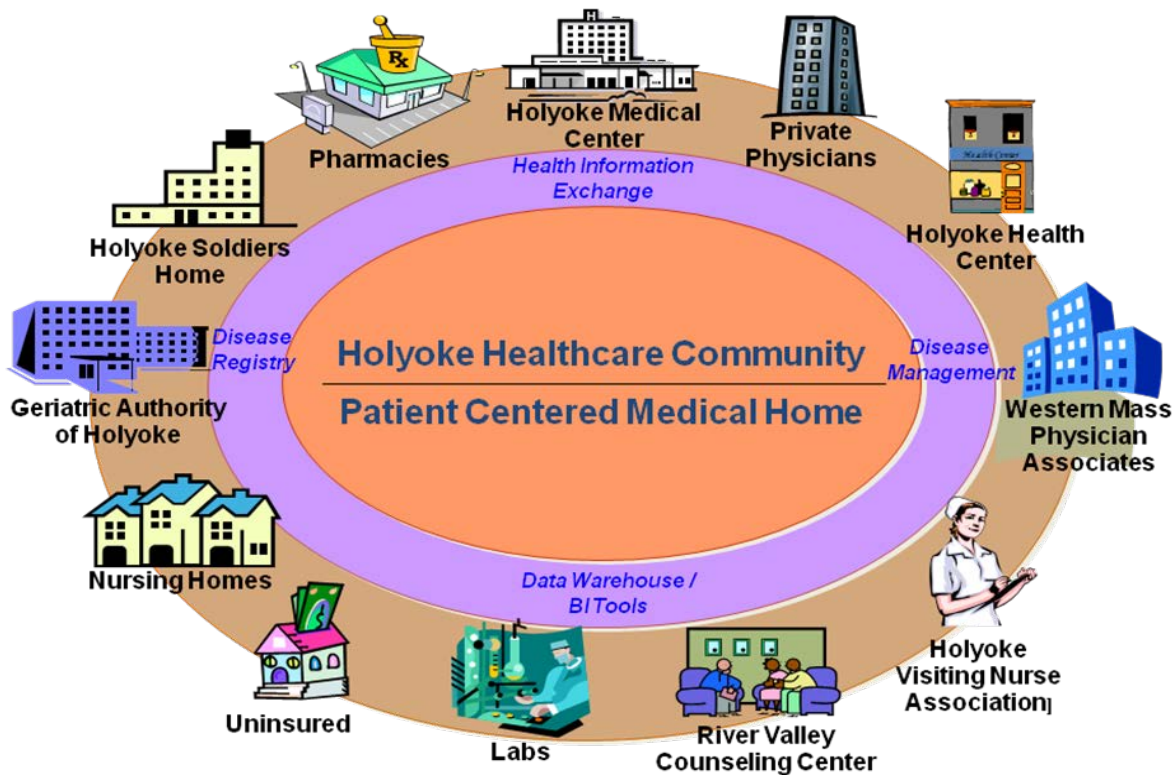
Holyoke Medical Center has initiated an ambitious effort towards fully integrating the community-based physicians, the local health center, social agencies and long term care and rehabilitation providers in the community into one seamless transparent patient-focused system. While some tools are currently in place that may act as a foundation to accomplish this, much work needs to be done to move toward a patient-centered model of care. A collaborative and proactive plan to meet the needs of this patient population is essential; and this plan should be based on best practice guidelines.

HMC's vision includes developing routine processes to help evaluate the quality of care, and to make rapid changes to meet or exceed emerging quality benchmarks. HMC envisions that a team of healthcare professionals, who are specially trained in a new model of collaborative health care, will help patients identify specific wellness activities and/or implement treatments that will optimize their personal health status. Assuming that adequate funding is made available, HMC envisions the effective use of computerized health information systems that will help this new patient/provider partnership to track diagnostic testing, consultations and follow-up after each hospital visit and/or

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Emergency Department visit, ensure compliance with prescribed medications, and generate reminders for wellness-related screening exams or procedures. In an ideal world, HMC envisions that this enhanced communication system may extend beyond the acute care setting, to include at-home wellness activities and end-of-life hospice support.

To begin this aggressive and action-oriented journey, implementing key elements of the proposed National Committee for Quality Assurance (NCQA) Patient Centered Medical Home (PCMH) will be necessary across the continuum of care in the community. By launching specific elements of the PCMH, removing capacity restraints, rebuilding a strong base of primary care and specialty physicians, and expanding the computerized health information initiatives that are currently being piloted, it is believed that the entire experience of care for patients will improve. This includes improving factors such as communication, convenience, cost, quality and safety, and ultimately provide for a better quality of life for the patient population.

HMC believes that this vision will reposition primary care physicians as the best point of care to guide patients through their complete health care plans. The primary care provider can build a personal (and knowledgeable) relationship with his/her patients. With a robust and pro-active primary care function in place, acute care hospitals such as HMC may see a decline in the number of chronic disease admissions, and a decline in the number of preventable readmissions for chronic disease, with these conditions being effectively managed either at home or in the primary care setting.

An often overlooked but nonetheless critical player in wellness is the local pharmacist. With a more integrated and collaborative health care delivery system, pharmacies will experience an improvement in communication among healthcare providers, patients, pharmacists, and third-party payors. Accurate identification of patients and their prescribed medications will benefit the entire health delivery system, supporting lower costs, a reduction in medication errors, and an overall improvement in quality of life for patients.

Upon the completion of our ambitious projects, we hope to have identified the key elements of a successful Patient Centered Medical Home model. Ideally, our experiences will also show us how we might move forward to close the gaps to achieving that model on a longer-term basis, and confirm our ability to be certified in the NCQA Patient Centered Medical Home model system.

<u>Statement Regarding Related Initiatives Funded by the U.S. Department of Health and Human Services</u>

Holyoke Medical Center DSTI Projects are not directly related to any initiatives funded by the U.S. Department of health and Human Services. The only funds received, not directly related to patient care, are related to the American Recovery and Reinvestment Act (ARRA),"High Technology Initiative." As provided for in the STC, HMC's Health Information Exchange project number 1.2 builds upon the foundation provided by ARRA and significantly exceeds the minimum standard set for meaningful use. HMC views the HIE as a significant enhancement to Meaningful Use by creating a centralized repository and registry which will track patient care data, patient consents, and provide a cost effective method to enabling health information to follow the patient, be available for clinical decision making, and support

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appropriate use of healthcare information beyond direct patient care so as to improve population health. **Under ARRA, Hospitals only needed to test the ability to exchange a Continuity of Care Document (CCD) from their certified EHR hospital information system to another healthcare entity. Most c**ommon methods are point-to-point connectivity or secure messaging. Health Information Exchange is not a requirement for Meaningful Use Stage 1** nor is it a requirement for what is currently proposed for Stage 2' as the rule is not yet final.

Holyoke Medical Center will provide updates on our participation in any new HHS-funded initiatives related to our DSTI projects in our biannual DSTI progress reports to be submitted to the Commonwealth.

Category 1 – Further Development of a Fully Integrated Delivery System with the Development of Patient Centered Medical Home

PROJECT 1.1: Implement process to determine readiness for Patient Centered Medical Home at HMC and affiliated practices.
Master Plan Project 1.1 – Patient Centered Medical Home

Goal: Establish a Patient Centered Medical Home (PCMH) model across HMC and its affiliated organizations. As the hub of Valley Health Systems, HMC will work with its affiliated organizations and practitioners to develop a PCMH model of care, in which each patient can develop an ongoing relationship with a personal physician and health care team that will take collective responsibility for the patient's care. The physician-led team will be responsible for the patient's healthcare needs when needed, coordinate care across Valley Health Systems and HMC, and will be committed to the PCMH model of care. The PCMH model will emphasize:

- The development of a model of team based care lead by the physician
- Development of panel management capacity using appropriate tools and workflow designs
- Effective chronic care management
- Development of mechanisms to enhance access to care
- Inclusion of patients in continuity of care design
- Electronic medical record deployment and integration into the health exchange
- Use of chronic disease registry

HMC, as the largest provider of medical services in its city, will work with its affiliated physician organization, Western Mass Physician Associates, Inc. (WMPA) and its practitioners to develop a PCMH model of care. WMPA has two adult primary care sites consisting of nine practitioners which serves 11,750 patients, one pediatric site consisting of four practitioners which serves 2,600 patients, and two ob/gyn sites consisting of four obstetricians and six midwives serving 4,400 patients. The current state and knowledge of a PCMH model of care at HMC and WMPA is in its early developmental stages. The WMPA primary care offices have just gone live with a new EHR, while its providers are still seeing a full caseload of patients. With the on-boarding of a new EHR, WMPA has seen significant change in workflow. PCMH models and the new EHR require that virtually all patient information flows through the physician. This allows the physician to be more of a gatekeeper and to have better knowledge of their patients. PCMH will require WMPA to look more closely at how they actively navigate patients through the continuum of care. Also, having a Health Information Exchange (HIE) in place will allow for more efficient and effective navigation of patients by reducing redundant and duplicative testing/orders in the current system. All healthcare organizations in the Holyoke surrounding community will have the option to join the HIE by signing a Participation Agreement. Providers with an EMR will have the ability to directly integrate with the HIE to submit and retrieve Continuity of Care Documents. Providers who do not have an EMR can view patient information through a web-based portal with minimal ability to update components of the patient longitudinal record.

This model has been identified as the capstone of HMC's five-year vision to transform its care practices throughout its parent organization Valley Health Systems and through the communities the organization serves. To undertake further progress of a fully integrated delivery system for the development of PCMH is a priority. In this model of care each patient will develop an ongoing relationship with a personal physician and health care team that will take collective responsibility for the patient's care.

Rationale: Abundant research comparing nations, states and regions within the U.S., and specific systems of care has shown that health systems built on a solid foundation of primary care deliver more effective, efficient, and equitable care than systems that fail to invest adequately in primary care. According to a 2006 study by the Commonwealth Fund, when adults have a medical home, their access to needed care, receipt of routine preventive screenings, and management of chronic conditions improve substantially.[1] The study also found that when primary care physicians effectively manage care in the office setting, patients with chronic diseases like diabetes, congestive heart failure, and adult asthma have fewer complications, leading to fewer avoidable hospitalizations.

Expected Results: HMC will increase patient and physician satisfaction, develop financial and organizational models to support practices adopting the PCMH model throughout its system. It will disseminate best practices throughout HMC and WMPA. It will increase access, continuity of care and satisfaction for all patients within the system and achieve sustainable changes in care delivery. It will develop plans for NCQA certification of at least two Western Massachusetts Physician Association PCP practices by 2016.

Relationship to Other Projects: The PCMH model will build upon the various other projects which are required to achieve a minimum of Level 1 NCQA PCMH Certification. The HIE, the Chronic Disease Registry and the Data Repository will be the foundation for the transmittal of patient care data between HMC and WMPA affiliated practices. The Chronic Disease Registry will help identify and provide risk stratification for the identified chronic disease patient and the data warehouse, through supporting software, will allow for further quality improvement review. These elements will be necessary to the implementation of a successful PCMH system.

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[1] A. C. Beal, M. M. Doty, S. E. Hernandez, K. K. Shea, and K. Davis, Closing the Divide: How Medical Homes Promote Equity in Health Care: Results From The Commonwealth Fund 2006 Health Care Quality Survey, The Commonwealth Fund, June 2007

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Project 1.1: Develop a Patient Centered Medical Home for HMC Affiliated Primary Care Practices Master Plan Project 1.1		
SFY 2012	**SFY 2013**	**SFY 2014**
EDUCATION **Milestone 1:** Educate the HMC and Western Mass Physician Associates (WMPA) practices' leadership (Board of Directors, Medical Staff, HMC Senior Staff), and WMPA primary care office practitioners and staff members on the elements of PCMH rationale and vision. **Metric 1 (MP-P 2):** Document attendance of identified leadership (e.g. Board of Directors, Medical Staff, HMC Senior Staff) and WMPA practitioners and staff members attending PCMH educational programs as well as specific content and educational materials covered. **Data Source:** Attendance logs and documentation of specific program educational content. .	**GAP ANALYSIS RESULTS - EDUCATION** **Milestone 4:** Educate WMPA providers and WMPA staff about readiness for adopting a PCMH model by utilizing gap analysis. **Metric 4 (MP-P 2):** Documentation of WMPA practitioners and primary care provider office staff attending educational programs on current readiness and gaps to development of patient centered medical home in the practice. **Data Source:** Documentation of attendance and educational content **CONTINUITY OF CARE** **Milestone 5:** Establish continuity of care percentage for the WMPA primary care and pediatric practices to improve the percentage of time they see their own PCP **Metric 5 (MP-Category 4 1.1 CCM):** Increase baseline for continuity of care percentage for the WMPA primary care and pediatric practices to improve the percentage of time they see their own PCP by 25% **Data Source:** Patient scheduling data	**DEVELOP ACTION PLAN (STANDARD 4, ELEMENT A, STANDARD 5, ELEMENT B AND STANDARD 6, ELEMENT C)** **Milestone 9:** Prioritize any gaps in the must-pass NCQA Patient Centered Medical Home Standard #4, Element A - Provide Self-Care Support, Standard #5, Element B - Referrals and Transitions of Care Follow Up and Standard #6, Element C – Implement Continuous Quality Improvement **Metric 9 (MP-P 5):** Develop action plan to eliminate gaps in the PCMH Standard #4, Element A and Standard #5, Element B. and Standard #6 Element C. **Data Source:** Documentation of completed action plans

Project 1.1: Develop a Patient Centered Medical Home for HMC Affiliated Primary Care Practices Master Plan Project 1.1		
SFY 2012	**SFY 2013**	**SFY 2014**
<u>**PERFORM GAP ANALYSIS**</u> **Milestone2:** Evaluate, via gap analysis, HMC's 3 affiliated primary care providers' sites at WMPA for readiness to develop and participate in the PCMH per NCQA guidelines. **Metric 2 (MP-P 4):** Perform gap analysis of WMPA practitioners utilizing the six categories of patient centered medical home NCQA 2011 standards and measure the percent compliance related to standards**.** Utilizing the gap analysis, assess the readiness of WMPA primary care physician practices for implementation of a PCMH model of care. **Data Source:** Documentation of completed gap analysis of affiliated HMC practitioners utilizing the elements of PCMH as identified by NCQA **<u>CONTINUITY OF CARE</u>** **Milestone 3:** Establish a baseline percentage for continuity of care for the WMPA primary care and pediatric practices to determine the percentage of time patients see their designated PCP	<u>**IDENTIFY PHYSICIAN CHAMPIONS**</u> **Milestone 6**: Identify physician champions at HMC and WMPA practices to educate and lead PCMH initiative. **Metric 6 (MP-P 1):** Document of physician champions at HMC and WMPA who have the interest and desire to be leaders of the project. **Data Source:** Documentation of named physician champions. **<u>DEVELOP ACTION PLAN (STANDARD 1, ELEMENT A, STANDARD 2, ELEMENT D and STANDARD 3, ELEMENT C)</u>** **Milestone 7**: Prioritize any gaps in the must-pass NCQA Patient Centered Medical Home Standard #1, Element A - <u>Access During Office Hours,</u> Standard #2, Element D - <u>Use Data for Population Management and</u> Standard #3, Element C – <u>Plan and Manage Care</u> **Metric 7 (MP-P 5):** Develop action plan to eliminate gaps in the PCMH Standard #1, Element A, Standard #2, Element D and Standard #3, Element C. **Data Source:** Documentation of completed action plan	<u>**IMPLEMENT ACTION PLAN** **(STANDARD 1, ELEMENT A, STANDARD 2, ELEMENT D, and STANDARD 3, ELEMENT C)**</u> **Milestone 10:** Implement action plan to eliminate gaps in the NCQA PCMH Standard #1, Element A - <u>Access During Office Hours</u>, Standard #2, Element D - <u>Use Data for Population Management. and </u>Standard #3, Element C – <u>Plan and Manage Care.</u> **Metric 10 (MP-I 1):** 50% of action plan implemented and completed to eliminate gaps in the PCMH Standard #1, Element A. , Standard #2, Element D and Standard #3, Element C. **Data Source:** Action plan developed in SFY2013 **<u>CONTINUITY OF CARE</u>** **Milestone 11:** Improve continuity of care percentage for the WMPA practices to increase the percentage of time that patients see their designated PCP **Metric 11 (MP-Category 4 1.1 CCM):** Improve continuity of care percentage for the WMPA patients by increasing the frequency at which they see their designated PCP by 50% over baseline measure **Data Source**: Patient scheduling data

Project 1.1: Develop a Patient Centered Medical Home for HMC Affiliated Primary Care Practices Master Plan Project 1.1		
SFY 2012	**SFY 2013**	**SFY 2014**
Metric 3 (MP-Category 4 1.1 CCM): Develop a baseline percentage measure of frequency at which patients see their designated PCP by comparing face to face visits with designated PCP to all face to face visits **Data Source:** Patient scheduling data	**EDUCATE PRACTICE PATIENTS** **Milestone 8:** Educate patients of the primary care physician practice in the organization's vision to develop PCMH and how it will benefit them as patients. **Metric 8 (MP-P 2):** To provide written documents to all primary care practice patients on the goal to establish a patient centered medical home and how it will affect their continuity of care in the future. **Data Source:** Educational materials provided	

Category 1 – Further Development of a Fully Integrated Delivery System

PROJECT 1.2: Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers
Master Plan Project 1.4: Establish Health Data Exchange Capability to Facilitate Integrated Patient Care

Goal: The objective is to expand on HMC's early pilot, continuing to build bidirectional connections to deliver laboratory and radiology results from the hospital to the physician practices real-time as discrete data, and exceed meaningful use by aggregating data from the hospital and physician offices allowing participating physicians to access a longitudinal record through a web-based portal or to directly integrate with the physicians' practice Electronic Medical Record (EMR). HMC is currently in the developmental stages of integrating one provider practice into a health information exchange (HIE) with the ability to exchange a Continuity of Care Document (CCD) with the hospital. Testing is currently being performed between the practice and the hospital. HMC will utilize the Nationwide Health Information Network (NHIN) set of standards, services, and policies as a benchmark to address the disparity of information systems across care locations today while ensuring interoperability and security as the landscape evolves over time. The hospital's integrated end-to-end, standards-based solutions will enable patient-centric access to medical records and patient data among multiple healthcare providers and locations utilizing the Integrating the Healthcare Enterprise (IHE) frameworks. The HIE will authenticate and authorize users, verify and validate the identity of patients for whom data is being exchanged, and log all transactions. Furthermore, the HIE project will implement a complete stack of services, registries, and repositories required to provide seamless interoperability to healthcare providers which will allow quick and easy access to review a patient's medical data gathered by different applications and stored in separate locations. Expansion of the HIE will help address several key healthcare issues such as:

- The limited access to clinical patient information
- The increasing costs and inefficiencies of healthcare services
- The challenges to improving quality of patient care and experience

As the foundation of the HIE continues to develop, HMC will institute business processes to address the disparate principles, models, definitions, products, and standards that pose potential risks to the success of the HIE. As the business processes surrounding data capture, translation, and transmission are addressed in this initiative, HMC will expand connectivity within the community to 50 providers with an EHR by June 2014--providing improved accessibility, reliability, and accuracy of patient records while obtaining trust in stakeholders and patients. This project is critical to HMC's strategic vision of a connected community and to enabling health information to follow the patient, be available for clinical decision making, and support appropriate use of healthcare information beyond direct patient care so as to improve population health.

HMC's business model for the development of the HIE has created economies of scale for the individual community practices, reducing connectivity and integration costs, and has helped avoid higher implementation costs if point-to-point interfaces were installed from each practice. HMC's planning of the HIE has lead to higher EMR adoption rates in the Holyoke community because of the tight integration with the systems selected and the vision of improving care team coordination and cross continuum patient information at the point of care, providing patients more accurate and timely service. HMC envisions expanding the HIE to connect both affiliated and non-affiliated physicians, other healthcare institutions, and the Massachusetts statewide HIE.

HMC believes our strategic initiative is ahead of the Massachusetts eHealth Institute (MeHI) time line and aligns with the goals and objective of the State for expanding access to medical information, improving patient outcomes, and reducing healthcare costs. The MeHI is responsible for the statewide HIE efforts. Based on the MeHI Health IT Council and Advisory Committee Meeting on September 19, 2011, the statewide HIE will be implemented in three (3) phases:

1. Create infrastructure to enable secure transmission ("directed exchange") of clinical information – October 2012
2. Create infrastructure to facilitate data aggregation/analysis and support Medicaid CDR – 2013
3. Create infrastructure for cross-institutional queries for and retrieval of patient records (EMPI/RLS, Consent Services) – 2014

By 2015, MeHI expects to develop a method and strategy for a statewide solution to integrating HIE services at a community/practice level. HMC expects to have all three (3) of the statewide HIE phases implemented by SFY 13 for at least 20 providers within the DTSI waiver. An infrastructure to enable secure direct transmission will be completed in SFY12. The HMC strategic plan for a community HIE will allow local providers who are not part of a larger enterprise system to cost effectively leverage advanced interfaces, repository and registry services, and localized technical support to establish connectivity to the State HIE.

Participating providers will be educated on how to locate patients in the HIE registry and locate continuity of care documents for viewing of patient information from disparate systems or integration of data into their EMR system. Physicians will learn how to utilize the data in the exchange to improve their care processes such as medication reconciliation process and review of diagnostic results which have already performed to reduce the duplication of tests. Several methodologies will used to educate participants such as individual and group training sessions, newsletters, and other printed materials.

In year one HMC will establish a governance structure with physician leaders and identify potential stakeholders and participants for the HIE within the HMC affiliated practices, and HMC affiliated practices will be educated on the benefits of the HIE, data sharing models, privacy and security concerns and regulations. HMC will develop a baseline for the amount of lab and radiology results delivered electronically as discrete data integrated into physician office electronic medical records and increase the integration over the 3 year plan. Year 1 will also include the implementation of a direct and trusted communication network between Western Mass Physician Associates primary care locations and HMC to begin the exchange of information related to HF and COPD patients. During 2013 and 2014, HMC will research best practices and develop policies related to privacy, security and data ownership. A data architecture plan will be developed on how shared data will be submitted, processed, stored, and used with the advanced features of the HIE system including the central repository and patient registry. HMC will increase participation in the HIE and will develop reports on patient and physician activity.

Rationale: Current healthcare costs and reimbursement models have been described as being unsustainable. Addressing these issues requires dynamic information and better outcomes. In 2011, HMC, in coordination with the medical staff, embarked on a multi-year strategic plan to develop, implement, and support Health Information Technology initiatives by beginning the process of building a community-wide Health

Information Exchange (HIE). HMC engaged local healthcare providers and the Physician Hospital Organization to develop a strategy on the selection of a community-wide ambulatory EHR product and HIE. Vendors were evaluated based on functionality, pricing, project planning and training approach, and reference feedback. To support a wide variety of business relationships that exist among and between healthcare providers, while focusing on the common goals of improved patient care, HMC invested in a high availability, fault tolerant virtualized server infrastructure and storage area network (SAN) environment with the goal of exceeding meaningful use requirements for the exchange of data. HMC views the community-based ambulatory model and development of an HIE as a cohesive strategy towards addressing the multitude of healthcare system needs with a long-term vision of connecting to the state and national health information networks. The HIE will allow for reductions of waste in the healthcare system, and better serve the patient population with more concrete continuity of care by connecting disparate systems, improving the flow of patient information, and the increasing ability to track patients with chronic disease.

Expected Results: HMC expects the HIE will provide patient indexing and record locator services required to locate the correct patient information within the community. The HIE will feature an open standards interoperability technology solution that will be built on sound principles and processes to address HIE workflows. This will provide participating providers in the HMC system with shared patient information from disparate systems in a real time concurrent fashion, thus enhancing the patient experience, reducing waste, and improving the quality of care of our patient population. The ability to share information between disparate systems and across organizational boundaries will provide the following additional benefits:

- Improved care team coordination. Optimal treatment for a chronic condition usually requires the expertise of specialists, nutritionists and even mental health counselors to change patient lifestyles. An HIE provides a cost-effective mechanism for members of the extended care team to work with the physician and patient to determine the best course of self-care management and to share information to better coordinate care, monitor outcomes and avoid unnecessary costs associated with complications
- Reduced incidence of duplicate and unnecessary tests. Avoiding repeat tests by making the previous lab results or radiology reports readily available electronically to providers. Reduce delays in care or wasted time tracking down the information.
- Having cross continuum patient information available at the point of care, thus providing patients more accurate and timely service. Access to information regarding the patient care received elsewhere gives health care providers a better, more complete picture of the patient's health and healthcare needs.

Relation to other Projects: The HIE is a necessary project to complete to enhance and support prevention of hospital readmissions, navigation of patient care through the system, the movement towards PCMH, development of chronic disease registry, warehousing of patient and business data to improve patient population and quality of care. The HIE will be an important piece of HMC's ability to better meet the transition of healthcare delivery and the move towards alternative payment systems with the Commonwealth of Massachusetts.

Project 1.2: Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers Master Plan Project 1.4:		
SFY 2012	**SFY 2013**	**SFY 2014**
GOVERNANCE STRUCTURE **Milestone 1:** Establishment of governance structure with community physician leaders. **Metric 1 (MP-P 1):** Governance committee created with community physician involvement. **Data Source:** List of members participating on the Governance Committee **STAKEHOLDER IDENTIFICATION** **Milestone 2:** Identify potential stakeholders and participants for the HIE within the HMC affiliated practices. **Metric 2 (MP-P 2):** List of HMC affiliated providers committed to participation in the HIE. **Data Source:** Report of HMC affiliated providers committed to participating in HIE. **EDUCATE COMMUNITY PROVIDERS** **Milestone 3:** Provide education on the benefits of an HIE, data sharing models, privacy and security concerns and regulations to potential participants. **Metric 3 (MP-P 3):** Training materials for participating providers. **Data Source:** Attendance logs and documentation of specific educational program content	**CARE MANAGEMENT** **Milestone 5:** Enable direct and trusted connectivity between Western Mass Physician Associates (WMPA) primary care locations and HMC to begin the exchange of mutually beneficial information related to HF and COPD patients. **Metric 5 (MPI-2-bullet 4) 9:** report the percent of unique patient encounters where provider obtained data from HIE [2]Increasing **Data Source:** Meditech and eCW reports **DATA INTEGRITY – BEST PRACTICES** **Milestone 6:** Research privacy, security and data ownership and stewardship best practices related to advanced features of the HIE including the central repository and patient registry. **Metric 6 (MP-P 4):** Completion of a policy and procedures document for privacy, security, and data ownership. **Data Source:** Policy and procedures document regarding privacy, security and data ownership.	**CARE MANAGEMENT** **Milestone 12:** Enable direct and trusted connectivity between Western Mass Physician Associates (WMPA) primary care locations and HMC to begin the exchange of mutually beneficial information related to HF and COPD patients. **Metric 12 (MP-I-2bullet 4) P 9:** report the percent of unique patient encounters where provider obtained data from HIE [3] **Data Source:** Meditech and eCW reports **PATIENT CONSENT – EDUCATION** **Milestone 13:** Educate participating providers and potential participants on the patient consent form. **Metric 13 (MP-P 8):** Evidence of training on patient consent for participating providers. **Data Source:** Attendance logs and documentation of specific program educational content.

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[2] Data to include the percentage of baseline WMPA patients with HF or COPD having a provider encounter within 7 days of discharge by 25%. Numerator = WMPA patients with HF or COPD seen within 7 days of discharge Denominator = Total number of HF and COPD patients from WMPA discharged from the Emergency Department or the inpatient units

Project 1.2: Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers Master Plan Project 1.4:		
SFY 2012	**SFY 2013**	**SFY 2014**
CARE MANAGEMENT **Milestone 4:** Enable direct and trusted connectivity between Western Mass Physician Associates (WMPA) primary care locations and HMC to begin the exchange of mutually beneficial information related to HF and COPD patients. This milestone also supports Category 4.2 for development of direct communication with specialist for electronic referrals. **Metric 4 (MP-I-2bullet 4):**. Develop a report of percent of unique patient encounters where provider obtained data from HIE. [4] **Data Source:** Meditech and eCW reports	**CLINICAL DATA ARCHITECTURE PLAN** **Milestone 7:** Determine how clinical shared data will be submitted, processed, stored and utilized for the central repository and patient registry within the HIE system. **Metric 7 MP-P 5):** Completion of a clinical data architectural framework with technical diagram and description. **Data Source:** Document outlining the data architectural framework including a technical diagram. **HIE POLICY & PROCEDURES** **Milestone 8:** Develop policy and protocol documentation on how data exchange issues such as interface and connectivity problems will be resolved. **Metric 8 (MP-P 6):** Completion of policy and protocols documentation for the resolution of data exchange issues. **Data Source:** Completed policies and procedures regarding how data exchange interface and connectivity problems will be solved. **DATA INTEGRITY – EDUCATION**	**INTEGRATE PROVIDERS INTO HIE** **Milestone 14:** Integrate 30 additional providers with an EHR into the HIE utilizing the advanced features of the HIE including the central repository and patient registry. **Metric 14 (MP-I 1):** Report of all providers by facility with the number of patients who opted into the HIE and are utilizing the repository and patient registry for continuity of care: • Review and document percent of patients consenting to HIE system inclusion • % of providers sending transactions • % of providers receiving transactions • Number of Continuity of Care Documents sent by provider • Security Audit Logs • System availability reports • % of providers receiving Transactions **Data Source:** HIE system reports

[3]Data to include the percentage of baseline WMPA patients with HF or COPD having a provider encounter within 7 days of discharge by 50%. Numerator = WMPA patients with HF or COPD seen within 7 days of discharge Denominator = Total number of HF and COPD patients from WMPA discharged from the Emergency Department or the inpatient units

[4] Data to include baseline of HF and COPD patients encounters who received a follow up appointment within 7 days of being discharged from the hospital for WMPA patients. Numerator = WMPA patients with HF or COPD who have a provider encounter within 7 days of discharge Denominator = Total number of HF and COPD patients from WMPA discharged from the Emergency Department or the inpatient units

Project 1.2: Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers **Master Plan Project 1.4:**		
SFY 2012	**SFY 2013**	**SFY 2014**
	Milestone 9: Develop educational materials for participants relating to patient data sharing in the areas of privacy, security and data retention. **Metric 9 (MP-P 7):** Production of training materials to be provided to participating providers. **Data Source:** Documentation of specific educational content **PATIENT CONSENT WORKFLOW** **Milestone 10:** Workflow review of appropriate methodology for obtaining patient consent for inclusion in the HIE. **Metric 10 (MP-P 8):** Documentation of workflow for patient consents to implement a developed appropriate patient consent form to all users of the electronic health exchange. **Data Source:** Workflow documents **INTEGRATE 20 PROVIDERS INTO HIE** **Milestone 11:** Train and Integrate 20 providers with an EHR into the HIE providing them will the tools and consent forms to enroll their practices and patients utilizing the advanced features of the HIE including the central repository and patient registry. **Metric 11 (MP-I 1):** Report of all providers by facility with the number of patients who opted into the HIE and are utilizing the repository and patient registry for continuity of care • Review and document percent of patients consenting to HIE system inclusion • % of providers sending transactions • % of providers receiving transactions **Data Source:** HIE system reports	

Category 2 – Improved Health Outcomes & Quality:

PROJECT 2.1: Establish a Chronic Disease Registry
Master Plan Project 2.2: Establish a Chronic Disease Registry
Project Goal:
HMC cares for many patients suffering from chronic diseases such as HF and COPD which reflect the most frequently occurring readmission diagnoses. In an effort to address this problem, HMC will develop a chronic disease management registry to capture important information about patients with these chronic illnesses with the intent to use this information to:

- Identify and correct treatment gaps;

- Provide enhanced patient and family support during the hospital stay and during the transition from acute care episode through the next phase of care delivery (e.g., home, home with VNA services, short term rehab, skilled nursing facility, etc.);

- Reduce readmissions associated with chronic diseases: HF initially, followed by COPD.

Rationale:
Chronic illnesses are generally characterized by disease progression, leading to deterioration in functional status and overall health and quality of life. Patients must be highly motivated and engaged to develop and maintain healthy lifestyles that lead to the best control of chronic diseases. Further, patients must also have reliable access to healthcare and providers to monitor the disease and evaluate the effectiveness of the treatment plan. To this end, HMC will develop and implement chronic disease management models to improve the quality and scope of care delivery for patients with chronic diseases. A component of these models will include the development of a chronic disease registry.

The implementation of a chronic disease registry is critical to the provision of high quality of care and the successful transition of the patient through the healthcare system. The registry will provide clinicians with a common place to communicate information in a timely manner in order to better execute treatment plans for their patients. The development of such a registry will allow for coordinated care, especially for the complex patient who requires continuous care with different practitioners in different specialties. A registry will allow for medication review, alert the practitioner of other illnesses other than the one the specialist is treating the patient for, and decrease the risk of medical errors as more and more information is shared. Costs will be decreased as well as duplication of tests will be reduced since each practitioner will have access to tests and procedures already performed.

Expected Results:
- The chronic disease registry will begin tracking patients with a diagnosis of HF and expand to COPD in 2014;

- The chronic disease registry will identify gaps in treatment for HF and COPD patients by 2015;

- Develop readiness for PCMH

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Description of How Project Can Refine Innovations, Test and Disseminate Findings

Since poor information sharing across the continuum is one of the defects highlighted in an IHI report in 2009, in *"The Increasing Cost of Healthcare in the United States,"* the development of a chronic disease registry will be an innovation that will be refined periodically in response to information that is obtained and studied. Data such as patient's risk factors, chronic diseases, support systems and compliance with appointments and medications, as well as test results, will serve as triggers for further interventions or as an indication that the interventions have produced a positive or negative outcome. The analyzing of this information will be beneficial to the providers and will allow for outcomes to guide further improvements to systems being tested and for proven interventions to be spread across the continuum

Related Projects:

- Improved Management of Patients with Heart Failure (HF)/Expand Chronic Disease Care Management Models including Medication Management Initiative for Chronic Diseases (Category #2);
- Improved Management of Patients with Chronic Obstructive Pulmonary Disease (COPD)/Expand Chronic Disease Care Management Models including Medication Management Initiative for Chronic Diseases (Category #2);
- Establish a Health Information Exchange Between Affiliated and Community Providers of HMC (Category #1).

Project 2.1: Establish a Chronic Disease Registry Master Plan Project 2.2		
SFY 2012	**SFY 2013**	**SFY 2014**
ACCESS FUNCTIONALITY OF EXISTING SYSTEMS **Milestone 1**: Determine if the HMC Meditech EHR system has an available chronic disease registry which meets the elements necessary for use across the system. Determine if eClinical Works (ECW) electronic health record utilized by affiliated office practices has a chronic disease registry and if it meets the elements needed for use across the organization such as: • Recent hospitalizations • ED visits • Abnormal diagnostic tests • Changes in medication • Gaps in follow-up, etc. **Metric 1 (MP-P 1):** Complete functional assessment of Meditech and ECW system to meet the necessary elements to establish a chronic disease registry. **Data Source:** Documentation of chronic disease registry functional assessment of Meditech and ECW systems. CARE MANAGEMENT **Milestone 2:** Identify patients with heart failure who receive discharge instructions that address all the following: • Activity level • Diet • Discharge medications • Follow-up appointment • Weight monitoring • What to do if symptoms persist	IDENTIFY IT SOLUTION **Milestone 3:** Select appropriate IT solution based on evaluation of Meditech or ECW functionality (if any exist) and/or review of chronic disease vendors. Select the appropriate chronic disease registry that meets the necessary elements for implementation of a chronic disease registry across the organization. **Metric 3 (MP-P 4):** Procurement of contract with selected vendor **Data Source:** Contract document CARE MANAGEMENT **Milestone 4:** Identify patients with heart failure who receive discharge instructions that address all the following: • Activity level • Diet • Discharge medications • Follow-up appointment • Weight monitoring • What to do if symptoms persist **Metric 4 (MP-I 2):** Increase percentage of hospital discharged patients with heart failure who receive the identified Milestone 2 instructions by 25% **Data Source:** Documentation of chronic disease registry functional assessment of Meditech and ECW systems. LEAN EVALUATION **Milestone 5:** Evaluate workflow and use of chronic	REGISTRY – TEST PHASE **Milestone 9:** Pilot the selected chronic disease registry at HMC **Metric 9 (MP-P 8):** Evaluate and identify gaps in information exchange [5] in the registry within HMC's identified staff and departments. **Data Source:** Implementation and testing plan CARE MANAGEMENT **Milestone 10:** Identify patients with heart failure who receive discharge instructions that address all the following: • Activity level • Diet • Discharge medications • Follow-up appointment • Weight monitoring • What to do if symptoms persist **Metric 10 (MP-I 2):** Increase percentage of hospital discharged patients with heart failure who receive the identified Milestone 2 instructions by 50% **Data Source:** Documentation of chronic disease registry functional assessment of Meditech and ECW systems. ENTER PATIENTS INTO REGISTRY – TEST PHASE **Milestone 11:** Identify those patients to be entered into the registry for the conditions of HF and COPD and enter into registry

[5] Information exchange includes data that can populate the Chronic Disease Registry.

Project 2.1: Establish a Chronic Disease Registry Master Plan Project 2.2		
SFY 2012	**SFY 2013**	**SFY 2014**
Metric 2 (MP-I 2): Percentage of hospital discharged patients with heart failure who receive the identified Milestone 2 instructions. **Data Source:** Documentation of chronic disease registry functional assessment of Meditech and ECW systems.	disease registry at HMC using Lean methodology **Metric 5 (MP-P 5):** Review current and future state of workflow using chronic disease registry and identification of barriers to implementation. **Data Source:** Summary of Lean event **USER LIST** **Milestone 6:** Identify HMC and affiliated organization staff that will use the chronic disease registry **Metric 6 (MP-P 6):** Develop list of users by location and by priority of use by functional area. **Data Source:** List of users **STAFF EDUCATION** **Milestone 7:** Develop educational program to educate the identified staff on the rationale and use of the chronic disease registry **Metric 7 (MP-P 11):** Documentation of content and attendance at educational programs **Data Source:** Attendance list and educational content **IMPLEMENTATION PLAN** **Milestone 8:** Develop an implementation plan for a chronic disease registry **Metric 8 (MP-P 7):** After having identified barriers to implementation of the chronic disease registry, develop implementation plans to eliminate and/or reduce those barriers. **Data Source:** Survey and document plans Documentation of implementation plan	**Metric 11 (MP-P 9):** Document patients to be registered into registry at HMC **Data Source:** Identify patients with HF and COPD **DATA INEGRITY – TESTING** **Milestone 12:** Develop and implement test plan to determine accuracy of information populated into registry **Metric 12 (MP-P 10):** Implement and document results of test plan **Data Source:** Test plan **GO LIVE - IMPLEMENTATION** **Milestone 13:** Enter 100% of identified chronic disease patients with HF and COPD into the electronic registry that were identified at HMC in years 2012 and 2013 and placed in HMC's manual log. **Metric 13 (MP-I 1):** Identify gaps in treatment as identified in Best Practices for HF and COPD Plan. **Data Source:** Documentation of patients entered and gaps identified

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Category 2 – Improved Health Outcomes & Quality

PROJECTS 2.2A Improve Management of Patients with Heart Failure Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases
Master Plan Project 2.1: Implement Care Management Interventions for Patients with Chronic Diseases

Project Goal: HMC has identified that one of the top chronic disease populations readmitted to its facility is Heart Failure (HF). In response to this, HMC will develop Chronic Disease Management Programs that will provide proactive ongoing care to this population across the continuum of care to keep patients healthy by teaching self management skills which will allow patients to be better equipped to manage and identify symptoms earlier so interventions may be implemented earlier and avoid exacerbations and hospitalizations. The programs will include:

- Enrollment into a chronic disease tracking system to allow for tracking of chronic disease patients and follow up calls to review medications and discharge instructions and effectiveness of teaching done prior to discharge.
- Clear, concise discharge education will be provided specific to each illness and in languages specific to the patient population (Spanish and English). Educational materials will be shared across the continuum, VNA, SNFs, PCPs and Clinics in the community so the patient will receive reinforcement of education.
- Medications, diet, symptom management and activity will be clearly addressed. Patients will be provided with daily logs to track their progress and bring to appointments.
- Outpatient educational sessions will be developed and recommended to patients at discharge and be taught by a multidisciplinary team who will provide education on med management, symptom recognition, diet and activity medication management to decrease the need for hospitalization.

Patients will ultimately experience a better quality of life. The projects build on and expand the efforts of the already established Cross Continuum Team developed through the STAAR Initiative. The STAAR team will oversee and review the projects to identify areas that need improvement and analyze data. The data will be shared and analyzed across the continuum so that improvements in the transition of the patient from the hospital to the next level of care will take place and readmission of HF patients will decrease.

Rationale: According to the Institute for Healthcare Improvement (IHI), and the 5 MILLION LIVES Campaign, the hospitals that go beyond the basic discharge plan and focus intensively on improving the transition of patients from hospital to community will have a much better impact on reducing readmissions. (5 Million Lives Campaign, Getting Started Kit: Improved Care For Patients with Heart Failure How- To-Guide. Cambridge, MA, IHI, 2008)

Heart Failure is a major growing public health problem, affecting 5.3 million people, mostly elderly, with 660,000 new cases identified each year in the US. HF is the underlying reason for 12 to 15 million office visits and 6.5 million hospital days each year. Because of inadequate treatment plans, discharge guidance and follow up, many HF patients are caught in a revolving door process that culminates in deterioration and frequent re-hospitalizations. In addition to its human toll, HF carries a significant economic burden. There is also evidence of a significant "interaction gap" between health care providers, physician, and patients and their families. Many patients do not understand their plan of care and do not

feel comfortable playing a more active role in the self management of their illness. Comprehensive discharge planning, enhanced teaching and educational materials, and follow up support have been proven to have an effect on these types of patients.

HMC's program will concentrate on the following areas, (1) identifying on admission who needs to be educated (2) enroll patients in the program for tracking and follow up purposes (3) develop clear concise educational materials in languages most prominent in our community (4) Use of proven ZONE educational materials (5) teach back method for all staff to use with each patient (6)chronic illness specific discharge instructions (7) Multidisciplinary education (8) follow up appointments and phone calls (9) Visiting nurse visit on day 1 of discharge to review medications and instructions

Expected results:
- Readmission of patients with HF will decrease
- Coordination of care across the continuum
- Tracking will identify the known patients at risk
- Specific education will empower the patient to self manage

Description of How Project Can Refine Innovations, Test and Disseminate Findings

As a STAAR hospital, information is shared across the continuum through web based learning sessions, networking and participating in regional meetings where outcomes of testing are shared with other STAAR hospitals identifying barriers and solutions. Initiatives and strategies can be analyzed in order to adopt practices that produce the most positive results for each targeted population.

Delivery System Transformation Initiatives – *Holyoke Medical Center* **3-Year Plan**

Project 2.2A: Improve Management of Patients with Heart Failure/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases Master Plan Project 2.1		
SFY 2012	**SFY 2013**	**SFY 2014**
MANUAL HF LOG **Milestone 1:** Enter names of identified, admitted patients with Heart Failure into a chronic disease log to allow for tracking and follow up. **Metric 1 (MP-P 2):** All patients admitted with identified with HF will be entered into a manual log. **Data Source:** Manual log **PHARMACIST MEDICATION MANAGEMENT** **Milestone 2:** Hospital Pharmacist will educate HF patients on medication management prior to discharge. **Metric 2 (MP-P 13):** Of all the patients enrolled in the HF chronic disease log, 25% of the HF patients will receive pharmacy medication management teaching. **Data Source**: Manual log **TEACH BACK** **Milestone 3**: Teach Back Method will be used to educate patients or identified learner of admitted HF patients. **Metric 3 (MP-P 10)**: Of all the patients enrolled in the HF chronic disease log, 25% of the HF patients will be taught using Teach Back Method during hospitalizations. 10 staff observations for compliance will be performed monthly. **Data Source** IHI Teach Back Method tool.	**MANUAL HF LOG** **Milestone 8:** Enter names of identified, admitted patients with Heart Failure into a chronic disease log to allow for tracking and follow up. **Metric 8 (MP-P 2)**: All patients admitted with identified with HF will be entered into a manual log. **Data Source**: Manual log **PHARMACIST MEDICATION MANAGEMENT** **Milestone 9:** Increase percent of patients that will receive Pharmacy medication management instruction prior to discharge. **Metric 9 (MP-P 13):** Of all the patients enrolled in the HF chronic disease log, 50% of the HF patients will receive pharmacy medication management teaching **Data Source**: Electronic health record and/or follow up phone call log **TEACH BACK** **Milestone 10**: Teach Back Method will be used to educate patients or identified learner of admitted HF patients. **Metric 10 (MP-P 10)**: Of all the patients enrolled in the HF chronic disease log, 50% of the HF patients will be taught using Teach Back Method during hospitalizations. 10 staff observations for compliance will be performed monthly. **Data Source** IHI Teach Back Method tool.	**MANUAL HF LOG** **Milestone 14:** Enter names of identified, admitted patients with Heart Failure into a chronic disease log to allow for tracking and follow up. **Metric 14 (MP-P 2)**: All patients admitted with identified with HF will be entered into a manual log. **Data Source**: Manual log **PHARMACIST MEDICATION MANAGEMENT** **Milestone 15:** Increase percent of patients that will receive Pharmacy medication management instruction prior to discharge. **Metric 15 (MP-P 13):** Of all the patients enrolled in the HF chronic disease log, 75% of the HF patients will receive pharmacy medication management teaching **Data Source**: Electronic health record and/or follow up phone call log **TEACH BACK** **Milestone 16**: Teach Back Method will be used to educate patients or identified learner of admitted HF patients. **Metric 16 (MP-P 10)**: Of all the patients enrolled in the HF chronic disease log, 75% of the HF patients will be taught using Teach Back Method during hospitalizations. 10 staff observations for compliance will be performed monthly. **Data Source** IHI Teach Back Method tool

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Project 2.2A: Improve Management of Patients with Heart Failure/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases Master Plan Project 2.1		
SFY 2012	**SFY 2013**	**SFY 2014**
HOME VISITS **Milestone 4**: Visiting Nurses home visit will be scheduled for all qualified and consenting HF patients upon discharge **Metric 4 (MP-P 7)**: Of all the patients enrolled in the HF chronic disease log, 25% of all qualified and consenting HF patients will have follow up visit with VNA scheduled prior to discharge Numerator = total number of qualified, consenting HF patients who are sent home with a VNA referral (monthly) Denominator = Total number of HF patients enrolled in the log (monthly) **Date Source**: EHR/follow up telephone call log **FOLLOW-UP PHONE CALLS** **Milestone 5**: HF patients (enrolled in the HF chronic care log) will receive a follow up telephone call within 48 hours of discharge to review discharge instructions. **Metric 5 (MP-I 1):** Of all the patients enrolled in the HF chronic disease log, 25% of the HF patients will be contacted within 48 hours of discharge to review discharge instructions. **Data Source**: HF log, EHR and follow up discharge phone call **EDUCATION MATERIALS** **Milestone 6:** Develop and distribute HF-specific patient education materials to affiliated community providers. **Metric 6 (MP-P 4):** Documentation of receipt of education materials at WMPA, Holyoke Health Center,	**HOME VISITS** **Milestone 11**: Increase percentage of qualified and consenting HF patients who will have a Visiting Nurses home visit scheduled prior to discharge **Metric 11 (MP-P 7)**: Of all the patients enrolled in the HF chronic disease log, 50% of all qualified and consenting HF patients will have follow up visit scheduled prior to discharge Numerator = total number of qualified, consenting HF patients who are sent home with a VNA referral (monthly) Denominator = Total number of HF patients enrolled in the log (monthly) **Date Source**: EHR/follow up telephone call log **FOLLOW-UP PHONE CALLS** **Milestone 12:** Increase percentage of HF patients (enrolled in the HF chronic care log) who will receive a follow up telephone call within 48 hours of discharge to review discharge instructions. **Metric 12 (MP-I 1):** Of all the patients enrolled in the HF chronic disease log, 50% of the HF patients will be contacted within 48 hours of discharge to review discharge instructions. **Data Source**: HF log, EHR and follow up discharge phone call **CONTINUITY OF CARE** **Milestone 13:** During the post-discharge follow-up phone call to patients who were discharged with a diagnosis of HF will be asked CTM3 Question 1 "Did staff take my preferences and those of my family or caregiver into account in deciding what my healthcare	**HOME VISITS** **Milestone 17**: Increase percentage of qualified and consenting HF patients who will a Visiting Nurses home visit scheduled prior to discharge **Metric 17 (MP-P 7)**: Of all the patients enrolled in the HF chronic disease log, 75% of all qualified and consenting HF patients will have follow up visit scheduled prior to discharge Numerator = total number of qualified, consenting HF patients who are sent home with a VNA referral (monthly) Denominator = Total number of HF patients enrolled in the log (monthly) **Date Source**: EHR/follow up telephone call **FOLLOW-UP PHONE CALLS** **Milestone 18:** Increase percentage of HF patients (enrolled in the HF chronic care log) who will receive a follow up telephone call within 48 hours of discharge to review discharge instructions. **Metric 18 MP-I 1):** Of all the patients enrolled in the HF chronic disease log, 75% of the HF patients will be contacted within 48 hours of discharge to review discharge instructions. **Data Source**: HF log, EHR and follow up discharge phone call **EVALUATION: PATIENT INTERVIEWS/FAMILY CAREGIVER PARTICIPATION** **Milestone 19**: Interview registered HF patients who are re-hospitalized within 30 days of discharge to identify patients' understanding or reason for readmission. Use Interview questions developed

Project 2.2A: Improve Management of Patients with Heart Failure/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases Master Plan Project 2.1		
SFY 2012	**SFY 2013**	**SFY 2014**
the Visiting Nurses Association and one SNF will be reviewed. **Data Source:** Documentation of receipt of materials received by each provider location. **CONTINUITY OF CARE** **Milestone 7:** During the post-discharge follow-up phone call to patients who were discharged with a diagnosis of HF will be asked CTM3 Question 1 "Did staff take my preferences and those of my family or caregiver into account in deciding what my healthcare needs would be when I leave the hospital?" **Metric 7 (MP-P 21):** Establish baseline of percentage of patients who answer that they agree or strongly agree that preferences were taken into account. **Data Source:** Follow up discharge phone call	needs would be when I leave the hospital?" **Metric 13 (MP-P 21):** Increase percentage of patient who answer that they agree or strongly agree that preferences were taken into account by 20%. **Data Source:** Follow up discharge phone call	through the STAAR program, which will identify areas of possible failure in the post discharge process. Invite a patient or family caregiver to join the STAAR Cross Continuum team to assist with evaluation of chronic disease management programs before moving forward to the next chronic illness **Metric 19 (MP-P 16)**: 80% of readmitted patients with HF will be interviewed and invite patient or family caregiver to join the STAAR Cross Continuum team. **Data source**: Daily census (identifies all readmits) and Log or register of HF patients and meeting minutes **CONTINUITY OF CARE** **Milestone 20:** During the post-discharge follow-up phone call to patients who were discharged with a diagnosis of HF will be asked CTM3 Question 1 "Did staff take my preferences and those of my family or caregiver into account in deciding what my healthcare needs would be when I leave the hospital?" **Metric 20 (MP-P 21):** Increase percentage of patient who answer that they agree or strongly agree that preferences were taken into account by 40%. **Data Source:** Follow up discharge phone call

Category 2 – Improved Health Outcomes & Quality

PROJECTS 2.2B Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases
Master Plan Project 2.1: Implement Care Management Interventions for Patients with Chronic Diseases

Project Goal: HMC has identified that one of the top chronic disease populations readmitted to its facility is Chronic Obstructive Pulmonary Disease (COPD). In response to this, HMC will develop Chronic Disease Management Programs that will provide proactive ongoing care to this population across the continuum of care to keep patients healthy by teaching self-management skills, which will allow patients to be better equipped to manage and identify symptoms earlier so interventions may be implemented earlier and avoid exacerbations and hospitalizations. The programs will include:
- Enrollment into a chronic disease tracking system to allow for tracking of chronic disease patients and follow up calls to review medications and discharge instructions and effectiveness of teaching done prior to discharge.
- Clear, concise discharge education will be provided specific to each illness and in languages specific to the patient population (Spanish and English). Educational materials will be shared across the continuum, VNA, SNFs, PCPs and Clinics in the community so the patient will receive reinforcement of education.
- Medications, diet, symptom management and activity will be clearly addressed. Patients will be provided with daily logs to track their progress and bring to appointments.
- Outpatient educational sessions will be developed and recommended to patients at discharge and be taught by a multidisciplinary team who will provide education on med management, symptom recognition, diet and activity medication management to decrease the need for hospitalization.

Patients will ultimately experience a better quality of life. The projects build on and expand the efforts of the already established Cross Continuum Team developed through the STAAR Initiative. The STAAR team will oversee and review the projects to identify areas that need improvement and analyze data. The data will be shared and analyzed across the continuum so that improvements in the transition of the patient from the hospital to the next level of care will take place and readmission of COPD patients will decrease.

Rationale: Chronic Obstructive Pulmonary Disease, the fourth leading cause of death in the world, represents an important public health challenge that is both preventable and treatable. COPD is a major cause of chronic morbidity and mortality throughout the world. Many people suffer from this disease for years and die prematurely from it or its complications. COPD exacerbations can often be prevented. COPD is usually caused by smoking and unless treated proactively, the disease progresses and limits the ability of the person with COPD to perform normal activity. Smoking cessation, pneumonia and influenza vaccination, knowledge of current therapies, rehabilitation programs and inhaler technique and treatment reduces the number of exacerbations and hospitalizations. (Global Strategy for the Diagnosis, Management and Prevention of COPD, Revised 2011).

HMC's program will concentrate on the following areas, (1) identifying on admission who needs to be educated (2) enroll patients in the program for tracking and follow up purposes (3) develop clear concise educational materials in languages most prominent in our community (4)

Use of proven ZONE educational materials (5) teach back method for all staff to use with each patient (6)chronic illness specific discharge instructions (7) Multidisciplinary education (8) follow up appointments and phone calls (9) Visiting nurse visit on day 1 of discharge to review medications and instructions

Expected results:
- Readmission of patients with COPD will decrease
- Coordination of care across the continuum
- Tracking will identify the known patients at risk
- Specific education will empower the patient to self manage

Description of How Project Can Refine Innovations, Test and Disseminate Findings

As a STAAR hospital, information is shared across the continuum through web based learning sessions, networking and participating in regional meetings where outcomes of testing are shared with other STAAR hospitals identifying barriers and solutions. Initiatives and strategies can be analyzed in order to adopt practices that produce the most positive results for each targeted population.

Project 2.2B: Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases Master Plan Project 2.1		
SFY 2012	**SFY 2013**	**SFY 2014**
MULTIDISCIPLINARY TEAM **Milestone 1:** Develop a multidisciplinary team to develop patient educational tools that will promote self care health management using best practices developed through the STAAR and IHI initiative for COPD patients. **Metric 1 (MP-P 3):** Develop education materials **Data Source**: Education documentation **CONTINUITY OF CARE** **Milestone 2:** During the post-discharge follow-up phone call to patients who were discharged with a diagnosis of COPD will be asked CTM3 Question 1 "Did staff take my preferences and those of my family or caregiver into account in deciding what my healthcare	**MANUAL COPD LOG** **Milestone 3:** Enter names of identified, admitted patients with COPD into a chronic disease log to allow for tracking and follow up. **Metric 3 (MP-P 2):** All COPD patients admitted will be entered into a log. **Data Source:** Manual log. **TEACH BACK** **Milestone 4:** Respiratory therapists will be responsible to educate COPD patients using Teach Back on the correct use of inhalers and evaluate patients ability to perform prior to discharge **Metric 4 (MP-P 10):** Of all the patients enrolled in the COPD chronic disease log, 25% of COPD patients will	**MANUAL COPD LOG** **Milestone 10** Enter names of identified, admitted patients with COPD into a chronic disease log to allow for tracking and follow up. **Metric 10 (MP-P 2)**: All COPD patients admitted will be entered into a log. **Data Source**: Manual log **TEACH BACK** **Milestone 11:** Respiratory therapists will be responsible to educate COPD patients using Teach Back on the correct use of inhalers and evaluate patients ability to perform prior to discharge **Metric 11 (MP-10):** Of all the patients enrolled in the COPD chronic disease log, 50% of COPD patients will

Project 2.2B: Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases Master Plan Project 2.1		
SFY 2012	**SFY 2013**	**SFY 2014**
needs would be when I leave the hospital?" **Metric 2 (MP-P 21):** Establish baseline of percentage of patients who answer that they agree or strongly agree that preferences were taken into account. **Data Source:** Follow up discharge phone call	be taught using Teach Back Method during hospitalizations. 10 staff observations for compliance will be performed monthly. **Data Source:** Medical record documentation of education, electronic or manual **HOME VISITS** **Milestone 5**: Visiting Nurses home visit will be scheduled for all qualified and consenting COPD patients upon discharge. **Metric 5 (MP-P 7):** Of all the patients enrolled in the COPD chronic disease log, 25% of all qualified and consenting COPD patients will have follow up visit with VNA scheduled prior to discharge **Date Source**: EHR/follow up telephone call log **FOLLOW-UP PHONE CALLS** **Milestone 6**: COPD patients (enrolled in the COPD chronic care log) will receive a follow up telephone call within 48 hours of discharge to review discharge instructions. **Metric 6 (MP-I 1):** Of all the patients enrolled in the COPD chronic disease log, 50% of COPD patients will be contacted within 48 hours of discharge to review discharge instructions. **Data Source**: COPD log, EHR and follow up discharge phone call **STAFF AND RN EDUCATION** **Milestone 7:** RNs, RTs, hospital-based physicians, and Pharmacists will be educated on COPD program.	be taught using Teach Back Method during hospitalizations. 10 staff observations for compliance will be performed monthly. **Data Source:** Medical record documentation of education, electronic or manual **HOME VISITS** **Milestone 12**: Visiting Nurses home visit will be scheduled for all qualified and consenting COPD patients upon discharge. **Metric 12 (MP-P 7)**: Of all the patients enrolled in the COPD chronic disease log, 50% of all qualified and consenting COPD patients will have follow up visit with VNA scheduled prior to discharge **Date Source**: EHR/follow up telephone call log **FOLLOW-UP PHONE CALLS** **Milestone 13:** Increase percentage of COPD patients (enrolled in the COPD chronic care log) who will receive a follow up telephone call within 48 hours of discharge to review discharge instructions. **Metric 13 (MP-I 1):** Of all the patients enrolled in the COPD chronic disease log, 75% of COPD patients will be contacted within 48 hours of discharge to review discharge instructions. **Data Source**: COPD log, EHR and follow up discharge phone call **STAFF EDUCATION** **Milestone 14:** RNs, RTs, hospital-based physicians, and Pharmacists will be educated on COPD program.

Project 2.2B: Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases Master Plan Project 2.1		
SFY 2012	**SFY 2013**	**SFY 2014**
	Program will also be instituted into new hire orientation, and RNs will be educated on correct use of inhalers by RT in the event that RT is not available..	Program will also be instituted into new hire orientation, and RNs will be educated on correct use of inhalers by RT in the event that RT is not available
	Metric 7 (MP-P 12): 50% of all RNs, RTs, Pharmacists and Hospitalists will be educated about the program and 50% of RNs will show competency by demo to RT teaching the skill	**Metric 14 (MP-P 12):** 90% of all RNs, RTs, Pharmacists and Hospitalists will be educated about the program and 90% of RNs will show competency by demo to RT teaching the skill.
	Data Source: Attendance records of all education and Demo Checklist Documentation	**Data Source:** Attendance records of all education
	EDUCATION MATERIALS **Milestone 8:** Develop and distribute COPD-specific patient education materials to affiliated community providers.	**PULMONARY REHAB** **Milestone 15:** Expand the Pulmonary Rehab Service offered to patients to include increased hours and days of operation to allow for more access and capacity. A multidisciplinary approach will be taught at each session.
	Metric 8 (MP-P 4): Documentation of receipt of education materials at WMPA, Holyoke Health Center, the Visiting Nurses Association and one SNF will be reviewed.	**Metric 15 (MP-I12):** Of all the patients enrolled in the COPD chronic disease log, 50% of COPD patients will be referred to at least 3 weeks of pulmonary rehab, where appropriate
	Data Source: Documentation of receipt of materials received by each provider location.	**Data Source:** Documentation of referrals
	CONTINUITY OF CARE	**PATIENT INTERVIEWS/FAMILY CAREGIVER PARTICIPATION**
	Milestone 9: During the post-discharge follow-up phone call to patients who were discharged with a diagnosis of COPD will be asked CTM3 Question 1 "Did staff take my preferences and those of my family or caregiver into account in deciding what my healthcare needs would be when I leave the hospital?"	**Milestone 16:** Interview registered COPD patients who are re-hospitalized within 30 days of discharge to identify patients understanding or reason for readmission. Use Interview questions developed through the STAAR program which will identify areas of possible failure in the post discharge process. Invite a patient or family caregiver to join the STAAR Cross Continuum team to assist with evaluation of chronic disease management programs before moving
	Metric 9 (MP-P 21): Increase percentage of patients who answer that they agree or strongly agree that	

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Project 2.2B: Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases Master Plan Project 2.1		
SFY 2012	**SFY 2013**	**SFY 2014**
	preferences were taken into account by 20%.

Data Source: Follow up discharge phone call | forward to the next chronic illness.

Metric 16 (MP-P 16): 50% of readmitted patients with COPD will be interviewed and and invite patient or family caregiver to join the STAAR Cross Continuum team.

Data source: Daily census (identifies all readmits) and Log or register of COPD patients

CONTINUITY OF CARE

Milestone 17: During the post-discharge follow-up phone call to patients who were discharged with a diagnosis of COPD will be asked CTM3 Question 1 "Did staff take my preferences and those of my family or caregiver into account in deciding what my healthcare needs would be when I leave the hospital?"

Metric 17 (MP-P 21): Increase percentage of patients who answer that they agree or strongly agree that preferences were taken into account by 40%.

Data Source: Follow up discharge phone call |

Category 3 – Ability to respond to statewide transformation to value-based purchasing and to accept alternatives to fee-for-service payments.

PROJECT 3.1: Establish an Enterprise-wide Strategy for Information Management and Business Intelligence
Master Plan Project 3.6: Establish an Enterprise-wide Strategy for Information Management and Business Intelligence

Goal: Implement an enterprise-wide strategy to integrate data into a unified data warehouse enhancing the efficiency by which clinical and operational reporting and analytical activities are conducted. HMC will develop information management and business intelligence tools to improve performance and decision making. HMC is placing greater emphasis on monitoring and improving costs and quality as the organization develops new delivery models such as a patient-centered medical home and alternative reimbursement methodologies to deal with new reimbursement approaches and delivery requirements. HMC will leverage the new platform to address the myriad of challenges in the healthcare industry by applying the tools to perform analyses that may include the following areas:

- Financial analysis – HMC needs visibility into the full scope of financial operations, use of resources by patients and providers.
- Quality performance and safety analysis – monitoring performance comparisons across quality, patient access, patient satisfaction and utilization.
- Market Analysis – reporting on patient satisfaction supports the goal within the organization for increased accountability among healthcare providers.
- Claims and clinical data analysis – analyzing and monitoring claims will help determine the biggest risk areas and devise the most effective rate structures and pricing when participating in alternative reimbursement methodologies or bundled payments
- Patient care analysis – the new strategy will enable the right people to access the right information at the right time, delivering a single platform for sharing information with patients for better decision-making and connecting patients across hospital, nursing home, physician office, and community social support settings.

The data warehouse will be designed to automate the gathering of performance data on individual providers and comparing them to their peers by specialty using data pulled from the hospital information systems and other reporting products. The Medical Staff office and heads of clinical departments will be able to use these business intelligence tools to compare providers by: patient outcomes based on National Patient Safety and Quality measures; utilization of resources for their Top 10 clinical diagnoses, Volumes by Top 10 clinical diagnoses, and mortality rates. Key performance indicator (KPI) goals and benchmarks will be developed to empower the organization to answer crucial questions such as:

- How are physicians performing in relation to costs and quality?
- What could be done to improve performance on individual nursing units?
- How could HMC improve capacity and throughput without modifying facilities?
- How can HMC identify patients during a hospital stay who are at risk for readmission?

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In Year 1 HMC will perform a gap analysis to determine current data collection systems and manual data elements required to respond to Value Based Purchasing, key performance indicators (KPI) and bench marks related to clinical performance and outcomes. HMC will also develop a requirements document for the assessment of a data warehouse and business intelligence vendor selection. A job description will be developed to hire a Programmer Analyst to create and utilize the data warehouse and business intelligence tools. This position will be utilized as the development and application expert to support operational departments requiring clinical performance and outcomes.

In Year 2 a Programmer Analyst will be hired, and the selection of a data warehouse and business intelligence vendor will be made. There will be education to the entire organization about the benefits, complexities and challenges of developing the business intelligence environment, as well as technical training on the data warehouse and business intelligence software

In Year 3 the organization will identify and implement three targeted population improvement projects based upon the analysis of data obtained from the data warehouse to respond to statewide transformation of new payment methodologies, and real-time dashboards and reports will be developed. It is likely these projects will focus upon other major diagnosis categories such as behavioral health, diabetes, etc.

Rationale: The HMC information systems are rigid, strained, and inadequate to meet quality, patient safety, and business needs. The cost and effort of data collection is labor intensive, inefficient and redundant. Undue effort is expended for data collection and manipulation, especially for clinical quality and safety data. This significantly affects population management of our most fragile patients. Additionally, the skilled personnel to analyze the complex data we collect are underdeveloped. To meet the ability to respond to this statewide transformation to Value Based Purchasing and to provide better real time data that reflects concurrent care of our patients, it will be necessary to evaluate our system and develop systems that can take advantage of the electronic medical records currently in place.

With the increasing challenges and costs faced by the healthcare industry, hospitals must keep up with and respond to the transformation to value-based purchasing and payment reform. Business intelligence tools can help the hospital respond quickly to these transformations and increase competitive advantage by devising smart business solutions and enabling better business decisions every day. This new enterprise strategy will allow the hospital to tap into the many databases and deliver easy-to-comprehend insight to employees, management, and business partners. These software tools will allow the organization to find new revenue opportunities, reduce costs, reallocate resources, and improve operational efficiency.

Expected Results: The implementation of a data warehousing system will allow for concurrent and more robust real time data i.e., core measures, Pay- 4-Performance, etc. reporting on both patient and operational outcomes.

Relation to other Projects: Targeted inpatient clinical services or populations will have a performance dashboard reflecting key performance indicators in quality, patient experience, finance and efficiency. Meaningful reports will be available within the organization to define current state and drive performance improvement. Strategic business decisions will be supported by business intelligence and a centralized reporting structure. The data mining and enhanced reporting system will allow ongoing evaluation of the other projects we are entering into including patient data exchange, reduction of readmissions of the most chronic conditions, establishment of chronic disease registries, etc.

Project 3.1: Establish an Enterprise-wide Strategy for Data Management and Analysis Master Plan Project 3.6:		
SFY 2012	**SFY 2013**	**SFY 2014**
GAP ANALYSIS **Milestone 1:** Evaluate current data collection systems by performing a gap analysis to determine where, how and when patient data and operational data are collected to enable continuous quality improvement, respond to Value Based Purchasing, and identify key performance indicators (KPI) and bench marks related to clinical performance and outcomes. **Metric 1 (MP-P 1):** Complete gap analysis and determine ability to respond to Value Based Purchasing in a concurrent fashion. **Data Source:** Gap analysis of existing systems to Value Based Purchasing requirements **DATA FIELD REQUIREMENTS** **Milestone 2**: Identify current Value Based Purchasing and KPI field requirements which are not captured electronically utilizing the data collection systems identified in the gap analysis. **Metric 2 (MP-P 2):** List of data fields not captured electronically for the Value Based Purchasing and KPI requirements. **Data Source:** Gap analysis of existing data not captured in the hospital's systems	**HIRE PROGRAMMER ANALYST** **Milestone 5:** Post Programmer Analyst job description and hire qualified candidate to create and utilize data warehouse and business intelligence tools. Position requires SQL programming experience and data warehousing knowledg**e**. Other possibilities include developing existing internal programmer analyst resources. This position will be utilized as the development and application expert to support functional areas with the Business Intelligent tool set. **Metric 5 (MP-P 5):** Resource hired. **Data Source:** Evidence of new hire **SELECT VENDOR** **Milestone 6:** Selection of data warehouse and business intelligence vendor. Application capabilities will include integration with hospital health information systems, web user interface, and ability to create data marts and real-time dashboards related to business operations. **Metric 6 (MP-P 6):** Select vendor **Data Source:** Signed contract with selected vendor	**CARE MANAGEMENT** **Milestone 9:** Track Emergency Department visits for patients with HF or COPD and measure percent of admission rates of HF and COPD patients by primary care physician. **Metric 9 (MP-I 2):** Report percent of identifying patients who had ED visits with HF or COPD and report identifying admission rates of HF and COPD patients by primary care physician. **Data Source:** Data warehouse **POPULATION IMPROVEMENT PROJECTS** **Milestone 10:** Conduct analysis of data warehouse to identify a minimum of 3 patient population conditions that could benefit by future improvement interventions. **Metric 10 (MP-P 8):** Identify baseline of the three targeted populations **Data Source**: Business intelligence system report

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Project 3.1: Establish an Enterprise-wide Strategy for Data Management and Analysis Master Plan Project 3.6:		
SFY 2012	**SFY 2013**	**SFY 2014**
PROCUREMENT CRITERIA **Milestone 3:** Determine requirements for assessment of data warehouse and business intelligence vendor selection/approach. **Metric 3 (MP-P 3):** Document requirements for assessment of data warehouse and business intelligence software. **Data Source:** Documents requirements utilized for the selection of data warehouse and business intelligence tool **PERSONNEL** **Milestone 4:** Post job description for a new position to create and utilize data warehouse and business intelligence tools. **Metric 4 (MP-P 4):** Job description developed and posted. **Data Source:** Job description	**TECHNICAL TRAINING AND EDUCATION** **Milestone 7:** Selected vendor to perform training on Business Intelligence application. Training to include data warehouse field sets, table structures, data mart capabilities and functionality, report creation, and dashboards to track defined PKI metrics. Super-user application training will be scheduled for Information Systems, Quality, Medical Administration, Nursing, and other Ancillary departments as required. Train-the-Trainer approach will be utilized for the roll out. Educate the organization about the benefits, complexities, and challenges of developing a business intelligence environment **Metric 7 (MP-P 7):** Evidence of training, and training materials provided to the organization. **Data Source:** Evidence of specific educational content **CARE MANAGEMENT** **Milestone 8:** Track Emergency Department visits for patients with HF or COPD and measure admission rates of HF and COPD patients by primary care physician. **Metric 8 (MP-I 2):** Report identifying patients who had ED visits with HF or COPD, and report identifying admission rates of HF and COPD patients by primary care physician **Milestone 10:** **Metric 10 (MP-I 2):** Report identifying admission rates of HF and COPD patients by primary care physician **Data Source:** Data warehouse	**POPULATION IMPROVEMENT GAPS** **Milestone 11:** Percent of population – focused gaps in improvement of care. - Percent of patients with a diagnosis of depression discharged from the Emergency Department or Inpatient units with a primary care provider at WMPA - Percent of patients seen at HMC with a primary care physician at WMPA who has had a PHQ-9 screening - Percent of patients admitted with at least 1 diagnosis of diabetes that are WMPA patients **Metric 11 (MP-P 9):** Percent of population –focused gaps in improvement of care. **Data Source:** Business intelligence system report **VALUE BASED PURCHASING DASHBOARDS** **Milestone 12:** Create current Value Based Purchasing requirement dashboards and reports. **Metric 12 (MP-I 1):** Documentation of dashboards and reports. **Data Source:** Business intelligence system report

Category 3 – Ability to respond to statewide transformation to value-based purchasing and to accept alternatives to fee-for-service payments.

Project 3.2: Participate in a Learning Collaborative
Master Plan Project 3.9: Participate in a Learning Collaborative

- **Goal:** Collectively, the DSTI projects proposed in Categories 1, 2 and 3 of this plan have the potential to significantly transform the care experience for Massachusetts residents served by eligible safety net hospitals. As important as individual hospital efforts will be, there is even greater potential value in leveraging the hospitals' efforts for delivery system transformation through the sharing of best practices.

- **Rationale:** Participation in learning collaborative will provide a forum for eligible DSTI safety net providers to learn from other providers that share similar goals and to capitalize on potential synergies in their efforts.

- **Expected Results:** Through this project, HMC will join an existing learning collaborative – such as the Brookings-Dartmouth ACO Learning Network or another ongoing learning collaborative that aligns with DSTI goals – or will develop a new learning collaborative designed to support its transformation goals. Demonstration Year 15 (SFY 2012) goals will be for eligible DSTI safety net hospitals to explore existing and/or potential new opportunities for participation in a learning collaborative relative to measure 3.2.1 below.

- Potential project elements Include (All DSTI hospitals must select from among the following project elements):

  A. Explore existing and/or potential new opportunities for participation in learning collaborative whose goals align with the Triple Aim and DSTI transformation objectives.
  B. Select a learning collaborative in which to participate, which may consist of either:
      1. Identifying and joining an existing learning collaborative whose goals align with the Triple Aim and DSTI objectives; OR
      2. Developing a new learning collaborative structure designed to support the hospital's delivery system transformation goals and to align with the Triple Aim and DSTI objectives.
  C. In the case that a hospital elects to develop a new learning collaborative, establish and implement a new learning collaborative designed to support the hospital's delivery system transformation goals under DSTI and to align with the Triple Aim and DSTI objectives.
  D. Participate actively in the selected or new learning collaborative.
  E. Report on lessons learned from participation in learning collaborative as they relate to the hospital's delivery system transformation goals under DSTI.

- **Relation to Other Projects:** The learning collaborative model supports the development of a shared culture of continuous improvement and innovation, which will facilitate and enhance the individual hospitals' efforts to advance the Triple Aim through their DSTI projects.

Project 3.2: Participate in a Learning Collaborative Master Plan Project 3.9		
SFY 2012	**SFY 2013**	**SFY 2014**
Milestone 1: Explore existing and/or potential new opportunities for participation in learning collaborative. **Metric 1 (MP-P 1):** Hospital meeting minutes and/or documentation of research findings on learning collaboratives. **Data Source:** Internal hospital documentation	**Milestone 2:** Participate actively in learning collaborative. **Metric 2 (MP-P 2):** Documentation of attendance at and/or participation in learning collaborative activities. **Data Source(s):** Internal hospital documentation and/or learning collaborative documents **Choice of one of the following options for Project Element B (select a learning collaborative in which to participate):** Option 1 of Project Element B: **Milestone 3A:** Select and join an existing learning collaborative (if selecting option 1 of Project Element B). **Metric 3A (MP-P 3):** Documentation of hospital joining learning collaborative. **Data Source:** Internal hospital documentation and/or learning collaborative documents **OR:**	**Milestone 4:** Participate actively in learning collaborative. **Metric 4 (MP-P 5):** Documentation of attendance at and/or participation in learning collaborative activities. **Data Sources(s):** Internal hospital documentation and/or learning collaborative documents **Milestone 5:** Report on lessons learned from participation in learning collaborative as they relate to the hospital's delivery system transformation goals under DSTI. **Metric 5 (MP-P 6):** Hospital report on lessons learned. **Data Source:** Hospital report

Project 3.2: Participate in a Learning Collaborative Master Plan Project 3.9		
SFY 2012	**SFY 2013**	**SFY 2014**
	Option 2 of Project Element B: **Milestone 3B:** Develop a new learning collaborative structure (if selecting option 2 of Project Element B). **Metric 3B (MP-P 3):** Documentation of new learning collaborative goals, structure and membership and/or signed agreement with facilitator of new learning collaborative (if applicable). **Data Source(s):** Learning collaborative documents and/or agreement	

Category 4 – Population Focused Improvements

Pursuant to Section X of Attachment J to the Massachusetts Section 1115 Demonstration Special Terms and Conditions, the purpose of Category 4 is to evaluate the impact of the investments and system changes described in Categories 1, 2 and 3 through population-focused measures. Category 4 metrics recognize that the population-focused objectives do not guarantee outcomes but result in learning, adaptation, and progress. As such, eligible safety net hospitals will measure and report on selected measures but will not have milestones associated with the achievement of specific improvements. Hospitals shall commence reporting Category 4 measures starting in Demonstration Year 16 (SFY 2013).

Common Measures

All participating safety net hospitals will develop plans to report on a core set of Category 4 measures pursuant to Table 1 of Section X.D of Attachment J. Hospitals shall report on 11 Common Measures in Demonstration Year 16 (SFY 2013) and report on one additional Common Measure in Demonstration Year 17 (SFY 2014), for a total of 12 Common Measures in Demonstration Year 17. Because this category involves evaluating the initiatives and system changes described in Categories 1, 2, and 3 through population-focused objectives, the common measure set is organized around the Triple Aim:

Better Care: Improve the overall quality of the US health system by making health care more patient-centered, reliable, accessible, and safe. These goals, set forward by the Institute of Medicine in Crossing the Quality Chasm, are important domains for assessing the effectiveness of care improvements. In the context of the DSTI program, there is a focus on both the quality and experience of patient care.

One area of increasing national attention has been a focus on improvement of care transitions between providers or settings of care. Health care transitions, such as moves in and out of hospitals to post-acute care/nursing home care, home care (with and without home care supports), or outpatient care have been shown to be prone to medical errors; poor care coordination, infections and incorrect usage of medications—leading to potentially avoidable hospital readmissions, less than optimal patient health outcomes, and added health care costs.   This is especially the case for complex care needs, patients with social acuity, and co-occurring health conditions.

Given the importance of examining patient care transitions and their effect on patient outcomes, three Common Measures, utilizing patient experience of care measures from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey focus on whether patients' felt they had a good understanding of their medications and care needs post-discharge. Medication adherence and errors are a leading source of unnecessary emergency and acute care; therefore, it is an area of shared focus.[6] Included within the HCAHPS measures is the Three-Item Care Transition Measure (CTM-3). This measure set has recently been added as a voluntary option to the HCAHPS survey.

Better Care also includes a focus on care in Emergency Departments. Reducing the time patients remain in the emergency department (ED) can improve access to treatment and increase quality of care. Reducing this time potentially improves access to care specific to the patient condition and increases the capability to provide additional treatment. Overcrowding and heavy emergency resource demand have led to a number of problems, including prolonged patient waiting times, increased suffering for those who wait, rushed and unpleasant treatment environments, and potentially poor patient outcomes.

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[6] Forster AJ, Murff HJ, et al. "The Incidence and Severity of Adverse Events Affecting Patients after Discharge from the Hospital." *Ann Intern Med*. (2003) 138:161-167.

Better Care Common Measures	DY 16 Measure-ment Period	DY 16 Reporting Date(s) to EOHHS	DY 17 Measure-ment Period	DY 17 Reporting Date(s) to EOHHS
4.1 Care Transitions Measure Set (CTM-3) *Voluntary HCAHPS questions* *Data Source: Hospital vendor or Hospital Compare as available*	Not applicable in DY16. Requires new data capture.	Not applicable in DY16. Requires new data capture.	07/01/12 – 06/30/13	7/31/14
4.2: Patients who reported that staff "Always" explained about medicines before giving it to them. *HCAHPS Composite (Questions 16 & 17)* *Data Source: Hospital Compare*	01/01/11 – 12/31/11	1/31/13	01/01/12 – 12/31/12	1/31/14
4.3: Patients at each hospital who reported that YES, they were given information about what to do during their recovery at home. *HCAHPS Composite (Questions 19 & 20)* *Data Source: Hospital Compare*	01/01/11 – 12/31/11	1/31/13	01/01/12 – 12/31/12	1/31/14
4.4: ED Wait Time: Door to Diagnostic Evaluation by a Qualified Medical Personnel *CMS IQR measure (OP-20)* *Data Source: Hospital Compare*	01/1/2012 - 06/30/12	1/31/13	07/1/2012 - 06/30/13	1/31/14

Better Health: Improve the health of the population by supporting proven interventions and enhancing the quality of care delivered. Many of today's individual health care processes are designed to respond to the acute needs of individual patients, rather than to anticipate and shape patterns of care for important subgroups. Population health focuses on segmenting the population, perhaps according to health status, level of support from family or others, and socioeconomic status, to facilitate efficient and appropriate care delivery. The Category 4 common measures share a focus on examining population dynamics. Two CMS Inpatient Quality Reporting/Joint Commission measures report on proven immunization interventions that can improve the health of hospitalized populations following discharge—preventing subsequent care

interventions.[7] Two other ambulatory- sensitive measures examine acute admissions for chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF) patients—two patient populations of particular concern given their chronic care needs. A fifth measure looks at maternal and child health—examining the incidence of low-birth weight children, a leading determinant of newborn health especially important for Medicaid populations.

Better Health Common Measures	DY 16 Measure-ment Period	DY 16 Reporting Date(s) to EOHHS	DY 17 Measure-ment Period	DY 17 Reporting Date(s) to EOHHS
4.5: Pneumonia Immunization *CMS IQR/Joint Commission measure* *IMM-1a* [8] *Data Source: Hospital Compare*	01/01/12 – 06/30/12	01/31/13	07/01/12 – 06/30/13	01/31/14
4.6: Influenza Immunization (seasonal measure) *CMS IQR/Joint Commission measure* *IMM-2* [9] *Data Source: Hospital Compare*	01/01/12 - 03/30/12	01/31/13	10/01/12-03/30/13	01/31/14
4.7: Percent of discharged patients under age 75 who were hospitalized for Chronic Obstructive Pulmonary Disease (Ambulatory Sensitive-Condition Admissions Measure) *Modified AHRQ PQI-5: denominator modified to include only discharged hospital inpatients* *Data Source: Hospital billing data*	10/01/11 – 9/30/12	01/31/13	10/01/12 – 09/30/13	01/31/14

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[7] See Specifications Manual for National Hospital Inpatient Quality Measures for selected references on clinical effectiveness of immunizations. Available at http://www.qualitynet.org
[8] CMS and the Joint Commission began collecting this measure effective with January 1, 2012 discharges. IMM-1a includes all inpatients.
[9] CMS and the Joint Commission began collecting this measure effective with January 1, 2012 discharges. IMM-2 includes all inpatients.

Better Health Common Measures	DY 16 Measure-ment Period	DY 16 Reporting Date(s) to EOHHS	DY 17 Measure-ment Period	DY 17 Reporting Date(s) to EOHHS
4.8: Percent of discharged patients under age 75 who were hospitalized for Congestive Heart Failure (Ambulatory Sensitive-Condition Admissions Measure) *Modified AHRQ PQI-8; denominator modified to include only discharged hospital inpatients* *Data Source: Hospital billing data*	10/01/11 – 9/30/12	01/31/13	10/01/12 – 09/30/13	01/31/14
4.9: Low Birth Weight Rate: number of low birth weight infants per 100 births[10] *AHRQ PQI-9* *Data Source: Hospital records*	10/01/11 – 9/30/12	01/31/13	10/01/12 – 09/30/13	01/31/14

Cost-Effective Care: Improve cost-effectiveness of care through improved care delivery for individuals, families, employers, and the government. Measures that provide insights both into improved opportunities for health care delivery and health care cost-effectiveness are an area of particular focus in the Triple Aim. Many of the DSTI Category 1-3 projects include a specific focus on improving population health outside of the walls of the hospital (e.g. Primary Care Medical Homes, Health Information Exchanges, ACO development, etc.); therefore, it will be important to examine measures within the Category 4 Common Measures that look at hospital care indicators that are ambulatory-sensitive and that have the potential for better care coordination or care venues. Preventable readmissions are an area of nationwide focus, both for their cost and health implications, but also because many readmissions are the result of poor care hand-offs and lack of care coordination post discharge. Similarly, many pediatric asthma emergency department visits are potentially avoidable with concerted outpatient management and care plans; therefore, an ambulatory-care sensitive pediatric asthma measure, relevant to Medicaid populations, has been included. Lastly, a measure of early elective delivery examines a practice of care for which the evidence-base suggests can lead to unnecessary newborn complications and health care costs.[11]

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[10] Hospitals without maternity services are exempted from this measure.

[11] Clark, S., Miller, D., Belfort, M., Dildy, G., Frye, D., & Meyers, J. (2009). Neonatal and maternal outcomes associated with elective delivery. [Electronic Version]. *Am J Obstet Gynecol*. 200:156.e1-156.e4.

Cost-Effective Care Common Measures	DY 16 Measure-ment Period	DY 16 Reporting Date(s) to EOHHS	DY 17 Measure-ment Period	DY 17 Reporting Date(s) to EOHHS
4.10: Hospital 30-day, all-cause readmission rate to the index hospital following a hospitalization for all patients 18 and older (not risk adjusted) *See CMS IQR Readmissions Measures (AMI, CHF, and Pneumonia) for a list of standard exclusions, including: 1) index admissions for patients with an in-hospital death, 2) patients transferred from the index facility to another acute care facility, and 3) patients discharged against medical advice.[12]* *Data Source: Hospital billing data*	10/01/11 – 9/30/12	01/31/13	10/01/12 – 09/30/13	01/31/14
4.11: Percent of Emergency Department visits for children age 18 or less with a primary diagnosis of asthma--Ambulatory Sensitive-Condition *See AHRQ PDI-14 for numerator specification. Denominator specification includes children ages 2 to 17 with an ED visit* *Data Source: Hospital ED billing data*	10/01/11 – 9/30/12	01/31/13	10/01/12 – 09/30/13	01/31/14
4.12: Percent of patients with elective vaginal deliveries or elective cesarean sections at greater than or equal to 37 weeks and less than 39 weeks of gestation completed[13] *MassHealth Maternity Measure-3* *Data Source: MassHealth Quality Exchange(MassQEX)*	07/01/11-06/30/12	01/31/13	07/01/12-06/30/13	01/31/14

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[12] In addition, if a patient has one or more admissions within 30 days of discharge from the index admission, only one is counted as a readmission. No admissions within 30 days of discharge from an index admission are considered as additional index admissions. The next eligible admission after the 30-day time period following an index admission will be considered another index admission.

[13] Hospitals without maternity services are exempted from this measure.

Hospital-Specific Measures

In addition to the common measures listed in above, hospitals must select hospital-specific measures on which to report according to the projects they have selected in Categories 1-3. Hospitals must select for reporting in Category 4 a minimum of one measure per project up to a total of 15 Category 4 hospital-specific measures for projects selected in Categories 1-3. Project 3.9: Participate in a Learning Collaborative will not have associated Category 4 hospital-specific measures. Hospitals shall choose from the options listed in the Master DSTI Plan, which are associated with the project in Categories 1-3 to which they pertain.[14]

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[14] Hospitals must ensure that sampling procedures consistently produce statistically valid and useful data. If a hospital's denominator population for a given measure is not sufficiently large to produce statistically valid data, then hospitals shall not be required to report the data under Category 4 measures.

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Hospital-specific Measures

4.1   Related to Project 1.2 Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers and Project 2.1 Establish a Chronic Disease Registry

The goal is to give providers the ability to track high risk patients individually and by population subset, which will allow physicians and HMC to provide proactive care and treatment to individual patients or groups of similar patients. This measurement is consistent with the Massachusetts Patient-Centered Medical Home Initiative specification PCMHI 0016.

4.2   Related to Project 1.2 Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers and 2.1 Establish a Chronic Disease Registry

The Chronic Disease Registry will be utilized to identify high risk patients within the Western Mass Physician Associates and HMC treatment areas who were sent an electronic referral through the HIE for specialist treatment. The electronic exchange of referrals will provide an effective mechanism for members of the extended care team to work with the physician and patient to determine the best course of self-care management and share information to better coordinate care, monitor outcomes, and avoid costs associated with complications. The goal is to track the number of patients who keep their appointments and the turnaround time for reports being sent back to the primary care physicians. This measurement is consistent with the NCQA's Patient Centered Medical Home 2011 Standards Track and Coordinate Element B: Referral Tracking and Follow-Up MUST-PASS.

4.3   Related to Project 1.1: Develop a Patient Centered Medical Home for HMC Affiliated Primary Care Practices

Average third next available appointment wait time for the practice is calculated on a weekly basis by looking at providers' schedule and counting the days until their next third available appointment. An average across providers is calculated each week. The practices average is reported every six months to determine if there is an improvement in access to primary care services, primarily for our highest risk patients. A primary goal for success in a patient-centered medical home model and for maintaining and improving population health is to ensure adequate and timely access to primary care services. This measure will allow each office to monitor the success of the implementation of other initiatives related to improving access to care.

Source - This measure was developed by PCMHI, under their operational measures category.

4.4   Related to Project 2.1 Chronic Disease Registry Project 2.2 A Improve Management of Patients with Heart Failure/ Expand Chronic Disease Care Management Models and Project 3.1   Establish an Enterprise-wide Strategy for Data Management and Analysis

The rationale for this measure is to stratify the number of patients with heart failure who are readmitted to the hospital within 30 days of discharge using the all cause readmission rates. However, this measure will be stratified to specifically look for those patients who were

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readmitted with 30 days who also have heart failure to determine the treatment plan for that patient on the last admission, thus identifying gaps to prevent readmission. Data source: EHR, Chronic Disease Registry and Data Warehouse

4.5   Related to Project 2.1 Chronic Disease Registry Project 2.**2 B Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models and Project 3.1   Establish an Enterprise-wide Strategy for Data Management and Analysis**

The rationale for this measure is to stratify the number of patients with Congestive Obstructive Pulmonary Disease who are readmitted to the hospital within 30 days of discharge using the all cause readmission rates. However, this measure will be stratified to specifically look for those patients who were readmitted with 30 days who also have COPD to determine the treatment plan for that patient on the last admission, thus identifying gaps to prevent readmission. Data source: EHR, Chronic Disease Registry and Data Warehouse

4.6   Related to Project 2.1:   Establish a Chronic Disease Registry

COPD is usually caused by smoking and unless treated in a proactive way the disease progressively worsens and limits the ability of the person who has the disease to perform normal activities. According to the Massachusetts Dept of Public Health, *Quitworks Program: Tobacco Intervention Tips,* counseling, along with pharmacotherapy, have additive effects to the patient trying to quit smoking.

4.7   Related to Project 3.1:   Establish an Enterprise-wide Strategy for Data Management and Analysis

Improve the health of the population by supporting proven interventions and enhancing the quality of the care given. Identifying level of risk is one way to improve discharge planning for the especially high risk for readmission patient, and establishing that level of risk on admission is important. Certain factors impact the assignment of high risk including certain diagnosis such as COPD and CHF, socioeconomic status, level of support in the community and at home, mental health diagnosis, and poly pharmacy. Preventive interventions can improve the outcomes of this population and decrease the need for further care interventions. Early post discharge follow up for chronically ill patients had been tested and found to be beneficial according to the Institute for Healthcare Improvement, *How-To-Guide: Improving Transitions from the Hospital to Post Acute Care Settings to Reduce Avoidable Rehospitalizations, May 2011.*

4.8   Related to Project 2.2B: Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models

Studies have shown that when the COPD patient participates in the self management of their disease, it may reduce the burden of their disease including compliance with inhaled medications and technique. One of the contributing factors specific to the COPD patient at HMC is the poverty and low health literacy of our patients. Access to medications and transportation are often factors for what can be defined as non compliance with a treatment plan. Insuring that the COPD patient is receiving hands on education from a trained professional while an inpatient, using the

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"teach back method" on the administration of their prescribed inhaler and allowing them to take the inhaler home (if prescribed) to start treatment promptly and effectively will undoubtedly decrease the exacerbation of this population.
Patient Education and Counseling, Volume 52, Issue 3, Pages 267-270, March 2004.

4.9   Related to Project 3.1 Establish an Enterprise-wide Strategy for Data Management and Analysis
According to *IHI How-To-Guide: Improving Transitions from the Hospital to Post Acute Care Settings to Reduce Avoidable Rehospitalizations,(2011) and Eric Coleman, M.D., originator of the Care Transitions Coleman Model,* assigning a level of risk should occur on admission, and an enhanced, customized, discharge plan based on the level of risk for readmission should be implemented. One aspect of this plan for high risk patients includes a follow up appointment to be made prior to discharge. Communicate with agencies early if referral for home care, skilled facility or a transition coach is indicated. Meeting the patient's identified needs such as ability to obtain medications, transportation, level of support are all part of an enhanced individualized discharge plan. Key things patients and family caregivers need to know about transitioning out of the hospital is the cost of and where and how to obtain medications at discharge.
Real time Handover Communications (same reference as above). Practitioners need the following critical information:

1. the understanding of the patients baseline functional status
2. active medical and behavioral health problems
3. medication regimen
4. goals
5. family or support caregivers
6. medical equipment needs
7. pending labs and tests
8. ability and confidence for self care

Without this information, providers may duplicate care and overlook mental health issues or important aspects of the plan of care.

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Category 4 - Population-Focused Improvements- HMC specific measures.

Project	SFY 2012	SFY 2013	SFY 2014
4.1 Identify the percent of patients with a minimum of one chronic disease in each WMPA adult and pediatric practice (MP-PROJECT 1,.1)	N/A	Measure the percent of patients with a minimum of one chronic disease in each WMPA adult and pediatric practice. Numerator = Number of patients with diagnosis of HF Denominator = total number of patients AND Numerator = Number of patients with diagnosis of COPD Denominator = total number of patients.	Measure the percent of patients with a minimum of one chronic disease in each WMPA adult and pediatric practice. Numerator = Number of patients with diagnosis of HF Denominator = total number of patients AND Numerator = Number of patients with diagnosis of COPD Denominator = total number of patients.
4.2 Identify percent of patients enrolled in the Chronic Disease registry who are given a referral for specialist treatment of a chronic disease report (MP-PROJECT 2.2)	N/A	Measure the percent of patients given referral for specialist treatment of a chronic disease. Numerator = Number of HF and COPD patients given a specialty referral Denominator = Total number of patients with HF and COPD	Measure the percent of patients given referral for specialist treatment of a chronic disease Numerator = Number of HF and COPD patients given a specialty referral Denominator = Total number of patients with HF and COPD
4.3 Establish baseline average wait time for third next available appointment for the WMPA primary care and pediatric practices (MP-PROJECT 1.1)	N/A	Measure the average third next available appointment (wait time) for the WMPA practices. Determine wait time by provider for third next available appointment and calculate an average by office. Monitor weekly and report quarterly to measure improvement	Measure the average third next available appointment (wait time) for the WMPA practices. Determine wait time by provider for third next available appointment and calculate an average by office. Monitor weekly and report quarterly to measure improvement
4.4 Measure the percent of 30 day readmits to hospital of heart failure patients (MP-PROJECT 2.1)	N/A	Measure the percent of established baseline 30-day	Measure the percent of established baseline 30-day readmits to the hospital

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Project	SFY 2012	SFY 2013	SFY 2014
		readmits to the hospital for HF. Numerator: Number of patients readmitted each month with HF within 30 days of the last discharge Denominator: Total number of patients readmitted within 30 days of the last discharge per month	for HF. Numerator: Number of patients readmitted each month with HF within 30 days of the last discharge Denominator: Total number of patients readmitted within 30 days of the last discharge per month
4.5 Measure the percent of 30 day readmits to hospital of chronic obstructive pulmonary disease patients (MP-PROJECT 2.1)	N/A	Measure the percent of established baseline 30-day readmits to the hospital for COPD. Numerator: Number of patients readmitted each month with COPD within 30 days of the last discharge. Denominator: Total number of patients readmitted within 30 days of the last discharge.	Measure the percent of established baseline 30-day readmits to the hospital for COPD. Numerator: Number of patients readmitted each month with COPD within 30 days of the last discharge. Denominator: Total number of patients readmitted within 30 days of the last discharge.
4.6 Identify patient with a diagnosis of HF or COPD who are referred to attend smoking cessation counseling from a certified smoking cessation counselor. (MP-PROJECT 2.2)	N/A	Measure the percent of baseline patients who are referred to counseling. Numerator: Number of HF and COPD smokers who are referred each month. Denominator: Total number of	Measure the percent of baseline patients with HF or COPD who are referred to counseling. Numerator: Number of HF and COPD smokers who are referred each month. Denominator: Total number of HF and COPD smokers discharged each

Project	SFY 2012	SFY 2013	SFY 2014
		HF and COPD smokers discharged each month.	month.
4.7 Measure percent of identified "high risk" for readmission patients who are scheduled a follow up visit prior to discharge using STAAR Initiative Program tool for identifying high risk patients for readmission. (MP-PROJECT 3.6)	N/A	Measure the percent of established baseline patients identified as high risk for readmission that were scheduled a follow up appointment prior to discharge. Numerator: Number of high risk for readmission patients, (score of > or equal to 5) using a high risk tool to identify, patients in sample each month , who had a follow-up appt scheduled before being discharged. Denominator: total number each month of high risk for readmit patients .	Measure the percent of baseline patients identified as high risk for readmission that were scheduled a follow up appointment prior to discharge. Numerator: Number of high risk for readmission patients, (score of > or equal to 5) using a high risk tool to identify, patients in sample each month , who had a follow-up appt scheduled before being discharged. Denominator: total number each month of high risk for readmit patients .
4.8 Measure the percent of COPD patients who go home with their inhaler if it is "continued" on their medication discharge instructions. (MP-PROJECT 2.1)	N/A	Measure the percent of established baseline COPD patients who go home with their inhaler if it is "continued" on their medication instruction. Numerator: number of COPD patients who go home with their prescribed inhaler Denominator: total number of COPD patients prescribed an inhaler as an inpatient.	Measure the percent of baseline COPD patients who go home with their inhaler if it is "continued" on their medication instruction. Numerator: number of COPD patients who go home with their prescribed inhaler Denominator: total number of COPD patients prescribed an inhaler as an inpatient.
4.9 Measure timely handover communication	N/A	Measure the percent of	Measure the percent of baseline high risk

Project	SFY 2012	SFY 2013	SFY 2014
percentage of times critical information is transmitted at the time of discharge on identified high risk patients to the next site of care i.e., home health, LTC, rehab and/or PCP office (MP-PROJECT 3.6)		established baseline high risk patients discharged where hand-off communication is done on day of discharge. Numerator: number of patients in the sample each month, where critical information is transmitted at the time of discharge to the next site of care Denominator: number of identified high risk for readmit patients in the sample	patients discharged where hand-off communication is done on day of discharge. Numerator: number of patients in the sample each month, where critical information is transmitted at the time of discharge to the next site of care Denominator: number of identified high risk for readmit patients in the sample

Appendix A
Metric Funding Allocation Table

Hospital Name: Holyoke Medical Center, Inc.
DSTI Proportional Allotment Factor: 0.038949045

DY 15/SFY12			DY 16/SFY13			DY 17/SFY14		
Cat 1: Integration			**Cat 1: Integration**			**Cat 1: Integration**		
Annual Metric Base Value		$3,349,333	Annual Metric Base Value		$5,024,000	Annual Metric Base Value		$5,024,000
Metric Base Value Adjusted for Proportional Allotment Factor		$130,453	Metric Base Value Adjusted for Proportional Allotment Factor		$195,680	Metric Base Value Adjusted for Proportional Allotment Factor		$195,680
Project/ Metric	Optional Adjust-ment (%)	Metric Value	Project/ Metric	Optional Adjust-ment (%)	Metric Value	Project/ Metric	Optional Adjust-ment (%)	Metric Value
Project 1.1 Develop a Patient Centered Medical Home for HMC Affiliated Primary Care Practices			**Project 1.1 Develop a Patient Centered Medical Home for HMC Affiliated Primary Care Practices**			**Project 1.1 Develop a Patient Centered Medical Home for HMC Affiliated Primary Care Practices**		
Metric Base Value Adjusted for # Metrics		$217,422	Metric Base Value Adjusted for # Metrics		$195,680	Metric Base Value Adjusted for # Metrics		$326133
Metric 1		$217,422	Metric 4		$195,680	Metric 9		$326133
Metric 2		$217,422	Metric 5		$195,680	Metric 10		$326133
Metric 3		$217,422	Metric 6		$195,680	Metric 11		$326133
			Metric 7		$195,680			
			Metric 8		$195,680			
Project Subtotal		**$652,267**	**Project Subtotal**		**$978,400**	**Project Subtotal**		**$978,400**
Project 1.2 Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers			**Project 1.2 Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers**			**Project 1.2 Establish a Health Information Exchange (HIE) Between HMC and its Affiliated Providers**		
Metric Base Value Adjusted for # Metrics		$163,067	Metric Base Value Adjusted for # Metrics		$139,771	Metric Base Value Adjusted for # Metrics		$326,133
Metric 1		$163,067	Metric 5		$139,771	Metric 12		$326,133
Metric 2		$163,067	Metric 6		$139,771	Metric 13		$326,133
Metric 3		$163,067	Metric 7		$139,771	Metric 14		$326,133
Metric 4		$163,067	Metric 8		$139,771			

				Metric 9		$139,771			
				Metric 10		$139,771			
				Metric 11		$139,771			
Project Subtotal		**$652,267**		**Project Subtotal**		**$978,400**		**Project Subtotal**	**$978,400**

CAT 2: Innovations				CAT 2: Innovations				CAT 2: Innovations	
Annual Metric Base Value		$3,349,333		Annual Metric Base Value		$5,024,000		Annual Metric Base Value	$5,024,000
Metric Base Value Adjusted for Proportional Allotment Factor		$130,453		Metric Base Value Adjusted for Proportional Allotment Factor		$195,680		Metric Base Value Adjusted for Proportional Allotment Factor	$195,680

Project/ Metric	Optional Adjustment (%)	Metric Value		Project/ Metric	Optional Adjustment (%)	Metric Value		Project/ Metric	Optional Adjustment (%)	Metric Value
Project 2.1 Establish a Chronic Disease Registry				**Project 2.1 Establish a Chronic Disease Registry**				**Project 2.1 Establish a Chronic Disease Registry**		
Metric Base Value Adjusted for # Metrics		$326,133		Metric Base Value Adjusted for # Metrics		$163,067		Metric Base Value Adjusted for # Metrics		$195,680
Metric 1		$326,133		Metric 3		$163,067		Metric 9		$195,680
Metric 2		$326,133		Metric 4		$163,067		Metric 10		$195,680
				Metric 5		$163,067		Metric 11		$195,680
				Metric 6		$163,067		Metric 12		$195,680
				Metric 7		$163,067		Metric 13		$195,680
				Metric 8		$ 163,067				
Project Subtotal		**$652,267**		**Project Subtotal**		**$978,400**		**Project Subtotal**		**$978,400**
Project 2.2A Improve Management of Patients with Heart Failure/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases				**Project 2.2A Improve Management of Patients with Heart Failure/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases**				**Project 2.2A Improve Management of Patients with Heart Failure/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases**		
Metric Base Value Adjusted for # Metrics		$93,181		Metric Base Value Adjusted for # Metrics		$163,067		Metric Base Value Adjusted for # Metrics		$139,771
Metric 1		$93,181		Metric 8		$163,067		Metric 14		$139,771
Metric 2		$93,181		Metric 9		$163,067		Metric 15		$139,771
Metric 3		$93,181		Metric 10		$163,067		Metric 16		$139,771

Metric 4		$93,181		Metric 11		$163,067		Metric 17		$139,771
Metric 5		$93,181		Metric 12		$163,067		Metric 18		$139,771
Metric 6		$93,181		Metric 13		$163,067		Metric 19		$139,771
Metric 7		$93,181						Metric 20		$139,771
Project Subtotal		**$652,267**		**Project Subtotal**		**$978,400**		**Project Subtotal**		**$978,400**

Project 2.2B Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases				**Project 2.2B Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases**				**Project 2.2B Improve Management of Patients with Chronic Obstructive Pulmonary Disease/Expand Chronic Disease Care Management Models Including Medication Management for Chronic Diseases**		
Metric Base Value Adjusted for # Metrics		$326,133		Metric Base Value Adjusted for # Metrics		$139,771		Metric Base Value Adjusted for # Metrics		$122,300
Metric 1		$326,133		Metric 3		$139,771		Metric 10		$122,300
Metric 2		$326,133		Metric 4		$139,771		Metric 11		$122,300
				Metric 5		$139,771		Metric 12		$122,300
				Metric 6		$139,771		Metric 13		$122,300
				Metric 7		$139,771		Metric 14		$122,300
				Metric 8		$139,771		Metric 15		$122,300
				Metric 9		$139,771		Metric 16		$122,300
								Metric 17		$122,300
Project Subtotal		**$652,267**		**Project Subtotal**		**$978,400**		**Project Subtotal**		**$978,400**

CAT 3: Payment Reform				**CAT 3: Payment Reform**				**CAT 3: Payment Reform**		
Annual Metric Base Value		$3,349,333		Annual Metric Base Value		$5,024,000		Annual Metric Base Value		$5,024,000
Metric Base Value Adjusted for Proportional Allotment Factor		$130,453		Metric Base Value Adjusted for Proportional Allotment Factor		$195,680		Metric Base Value Adjusted for Proportional Allotment Factor		$195,680
Project/ Metric	Optional Adjust-ment (%)	Metric Value		Project/ Metric	Optional Adjust-ment (%)	Metric Value		Project/ Metric	Optional Adjust-ment (%)	Metric Value
Project 3.1 Establish an Enterprise-wide Strategy for Data				**Project 3.1 Establish an Enterprise-wide Strategy for Data**				**Project 3.1 Establish an Enterprise-wide Strategy for Data**		

Management and Analysis			Management and Analysis			Management and Analysis		
Metric Base Value Adjusted for # Metrics		$163,067	Metric Base Value Adjusted for # Metrics		$244,600	Metric Base Value Adjusted for # Metrics		$244,600
Metric 1		$163,067	Metric 5		$244,600	Metric 9		$244,600
Metric 2		$163,067	Metric 6		$244,600	Metric 10		$244,600
Metric 3		$163,067	Metric 7		$244,600	Metric 11		$244,600
Metric 4		$163,067	Metric 8		$244,600	Metric 12		$244,600
Project Subtotal		**$652,267**	**Project Subtotal**		**$978,400**	**Project Subtotal**		**$978,400**
Project 3.2: Learning Collaborative			**Project 3.2: Learning Collaborative**			**Project 3.2: Learning Collaborative**		
Learning Collaborative Annual Metric Base Value		$837,333	Learning Collaborative Annual Metric Base Value		$1,256,000	Learning Collaborative Annual Metric Base Value		$1,256,000
Metric Base Value Adjusted for Proportional Allotment Factor		$32,613	Metric Base Value Adjusted for Proportional Allotment Factor		$48,920	Metric Base Value Adjusted for Proportional Allotment Factor		$48,920
Metric Base Value Adjusted for # Metrics		$ 163,067	Metric Base Value Adjusted for # Metrics		$ 122,300	Metric Base Value Adjusted for # Metrics		$122,300
	Optional Adj. (%)			Optional Adj. (%)			Optional Adj. (%)	
Metric 1		$163,067	Metric 2		$122,300	Metric 4		$122,300
			Metric 3		$122,300	Metric 5		$122,300
Project Subtotal		**$163,067**	**Project Subtotal**		**$244,600**	**Project Subtotal**		**$244,600**
CAT 4: Population Health			**CAT 4: Population Health**			**CAT 4: Population Health**		
Annual Metric Base Value		N/A	Annual Metric Base Value		$3,078,431	Annual Metric Base Value		$2,907,407
Metric Base Value Adjusted for Proportional Allotment Factor		N/A	Metric Base Value Adjusted for Proportional Allotment Factor		$119,902	Metric Base Value Adjusted for Proportional Allotment Factor		$113,241
Metric Base Value Adjusted for # Metrics		N/A	Metric Base Value Adjusted for # Metrics		$ 101,917	Metric Base Value Adjusted for # Metrics		$97,063
# Measures Reported		N/A	# Measures Reported	20	$2,038,333	# Measures Reported	21	$2,038,333
Category 4 Subtotal		**$0**	**Category 4 Subtotal**		**$2,038,333**	**Category 4 Subtotal**		**$2,038,333**
Plan Approval (50% total annual allotment)		$4,076,666						

Annual Target Total	$8,153,333	Annual Target Total	$8,153,333	Annual Target Total	$8,153,333

Note: Certain project totals are off by $1 to $2 dollars due to rounding