

UCSF Medical Center

UCSF Benioff Children's Hospital

California Bridge to Reform

The University of California, San Francisco Medical Center
Delivery System Reform Incentive Pool Proposal (DSRIP)
for the California Section 1115(a) Medicaid Demonstration
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Executive Summary

From its beginnings more than a century ago, UCSF Medical Center (UCSFMC) has been dedicated to improving the health of people in San Francisco, the Bay Area and beyond. As an academic medical center at the forefront of teaching, discovery and patient care, we offer special services that often are not available elsewhere in the community. For the adult and pediatric populations, and inpatient and outpatient settings, our expertise spans the continuum of healthcare from primary care to intensive care.

UCSFMC Background Information

UCSFMC, representing its hospitals (UCSF Medical Center at Parnassus and Mount Zion and UCSF Benioff Children's Hospital), clinics and the UCSF faculty practice, is a tertiary and quaternary referral center for Northern California and the Western United States. In addition we provide primary and secondary care to San Francisco Bay Area (SFBA) residents and serve as a major provider of care to underserved communities in San Francisco County. Roughly 17.9% of inpatients are insured through Medi-Cal and 2.3% are uninsured. UCSFMC is second only to San Francisco General Hospital in total admissions of this underserved population. UCSFMC also serves as an important provider of specialty care for the Medi-Cal population in Northern California. One third of our Medi-Cal patients are referred for specialty care from outside the five-county SFBA. UCSFMC has almost 30,000 admissions and 750,000 ambulatory visits annually.

Ambulatory Services at UCSFMC has more than 100 clinics in San Francisco. In addition, we operate more than 75 outreach clinics, stretching from San Luis Obispo to the Oregon border.

UCSF Benioff Children's Hospital, ranked among the nation's best children's hospitals, has 180-beds and includes the Center for Mothers and Newborns, a pediatric intensive care unit, a neonatal intensive care nursery linked to a Birth Center, and a pediatric surgical suite. UCSF Benioff Children's Hospital is also one of the largest pediatric heart centers in the nation.

UCSFMC infrastructure available to support DSRIP Goals

In 2014 UCSFMC will open a groundbreaking hospital complex at Mission Bay, helping to usher San Francisco into a new era of healthcare. The innovative 289-bed complex will feature three separate hospitals, specializing in serving children, women, and cancer patients, as well as a green energy center and a helipad. The new facility is designed to enable the highest quality care and patient experience. The complex will include the hospitals, diagnostic services, ambulatory care, and multiple social services thus facilitating the integration and coordination that is necessary to reduce healthcare costs.

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Beginning in 2004, we embarked on a focused and coordinated effort to improve quality and patient safety. This effort was initiated after a comprehensive review revealed that quality and safety at UCSFMC was suboptimal. Since that time, we have expanded personnel and training in quality improvement and safety, developed and sustained a quality and safety monitoring and reporting system, and developed quality programs for all clinical departments and patient care units. Since 2004, we have reduced the risk of hospital acquired infections including central line associated blood stream infections, ventilator associated pneumonia, and surgical site infection; reduced the rates of falls, pressure ulcers, medication errors, and retained objects during surgery; and increased rates of hand hygiene compliance. In 2009 and 2010 UCSFMC was rated among the safest academic medical centers by the University Hospital Consortium (UHC).

In April 2010, we began development and installation of an integrated electronic medical record (EMR). A single system, EPIC, will be used in all clinical sites at UCSFMC. {Note: UCSFMC has renamed this EMR system to APeX, Advancing Patient-centered Excellence}. This solution will provide for seamless flow of all patient information across the entire UCSFMC health system, a critical element in helping to improve care quality and patient experience, and control costs. Through new capabilities in the EPIC system (e.g., "Care Everywhere"), we will be able to electronically share information with patients and referring providers outside the UCSFMC clinical enterprise. The project is on schedule to begin ambulatory implementation in April 2011 and inpatient implementation in October 2011.

UCSFMC DSRIP Approach

Numerous major healthcare leaders and leading organizations, including Centers for Medicare & Medicaid Services (CMS), Institute for Healthcare Improvement (IHI), and Agency for Healthcare Research and Quality (AHRQ), recommend that the path to fundamentally improving health care in the United States requires vast improvements in the integration and coordination of care for populations of patients as well as individuals. It is through this fundamental change to our healthcare delivery system that the triple aim of increased quality of care, improved patient experience, and reduced costs can be realized. At UCSFMC some of the necessary infrastructure to achieve the triple aim including improved facilities, a robust quality improvement program, and an electronic health record are now or will soon be available. However, we are only at the beginning of the necessary reorganization of our delivery system in order to achieve the triple aim goals. Through DSRIP, we can more readily and rapidly redesign the delivery system. Our approach will be to create a coordinated and connected system of care that spans primary care, specialty care, hospital care, community care, and home care with integration of quality and safety improvement culture at every stage. In particular, we will expand and redesign primary and specialty care clinics and develop a comprehensive transitions program so that care received anywhere in our system is seamlessly and reliably linked to subsequent care within our system, other delivery systems, in the community, and in our patients' homes.

Interventions

The proposed interventions are:

Category 1: Infrastructure Development

- Expanded Primary Care Capacity
- Implement and Utilize Disease Management Registry Functionality
- Enhance Performance Improvement and Reporting Capacity

Category 2: Innovation and Redesign

- Expand Medical Homes
- Increase Specialty Care Access/Redesign Referral Process
- Implement/Expand Care Transition Programs

Category 4: Urgent Improvement in Quality and Safety

- Improve Severe Sepsis Detection and Management
- Central Line-Associated Bloodstream Infection (CLABSI) Prevention
- Surgical Site Infection (SSI) Prevention
- Hospital Acquired Pressure Ulcer (HAPU) Prevention

Category 1: Expand Primary Care Capacity

Goal:

Like most academic health centers, UCSF Medical Center (UCSFMC) has traditionally emphasized tertiary care and acute care services to a greater degree than primary care. The adverse consequences of inadequate investment in primary care are becoming increasingly apparent in an emerging health care environment emphasizing coordination of care, management of chronic conditions, health promotion, and relationship with a primary care medical home as means to accomplish the triple aim of better outcomes, better patient experiences, and lower costs. UCSFMC operates 5 adult primary care practices (family medicine, general internal medicine, primary care geriatrics, women's primary health, and a new interdepartmental primary care practice that opened in early 2010), serving approximately 50,000 unduplicated patients.

Specific Challenges: The demand for new patient primary care appointments, including from our employees who prefer to receive their care at UCSFMC, has consistently exceeded our capacity. This has been particularly challenging for adult patients. The impending expansion of public and private plan health coverage will further aggravate the mismatch between demand and existing capacity in primary care. In addition, due to recent changes in managed care and physician group alignments in San Francisco, fewer primary care physicians in private, community practice are available to many of the patients receiving their specialty care at UCSFMC, adding to pressures to increase primary care capacity here.

Recruitment of clinically-oriented primary care physicians to UCSFMC will require measures to address the widening gap between our faculty compensation and compensation offered by Kaiser and other employers in a highly competitive marketplace for primary care physicians. Loan repayment has become an increasingly popular strategy for physician recruitment (e.g., by the National Health Service Corps), allowing physicians to eliminate medical indebtedness as a major factor influencing their employment decisions and allowing employers and sponsors to offer a circumscribed amount of recruitment incentive rather than an open-ended change in underlying compensation structure.

Major Delivery System Solutions to Address Challenges: Building capacity in primary care will require:

1. Expanding existing practices
2. Opening at least one new UCSFMC primary care practice
3. Recruiting the primary care clinicians needed for this expansion

Starting Point/Benchmark: Total adult primary care practice annual visit volume = 96,014.

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Expected result:

By the end of year 5, UCSFMC will have recruited at least 6 additional primary care clinician Full Time Employees (FTEs) in patient care roles relative to FY10 staffing, opened at least 1 new geographic primary care practice site, and increased annual encounter volume at UCSFMC primary care clinics by 10,000 relative to baseline (FY10).

Relation to Categories 2 and 3:

Increasing patient access to UCSFMC primary care medical homes is an essential infrastructure for achieving the project goals in Category 2 – Innovation and Redesign and Category 3 – Population Focused Improvement. Increasing the population of patients who can receive primary care is a critical first step in improving their preventative and chronic care needs.

Category 1: Expand Primary Care Capacity					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
<ul style="list-style-type: none"> Milestone(<i>process measure i</i>): Appoint primary care strategic planning group to plan and implement UCSFMC primary care expansion. Metric: UCSFMC administrative reports. Milestone (<i>process measure i</i>): Relocate General Medical Clinic to larger space at UCSFMC Mt Zion Campus. Metric: UCSFMC facilities planning documents. 	<ul style="list-style-type: none"> Milestone (<i>process measure v</i>): Recruit 2 additional primary care provider FTEs. Metric: UCSFMC HR records and clinic provider scheduling records. Milestone(<i>improvement measure ii</i>): Increase patient encounters at UCSFMC primary care clinics by 2,500 relative to FY10 encounters Metric: UCSFMC administrative data on patient encounters. <u>Data Source:</u> Registry, EMR, claims or other DPH source;. Rationale/Evidence measures increased volume. 	<ul style="list-style-type: none"> Milestone (<i>process measure v</i>): Recruit 2 additional primary care provider FTEs (total of 4). Metric: UCSFMC HR records and clinic provider scheduling records. Milestone(<i>improvement measure ii</i>): Increase patient encounters at UCSFMC primary care clinics by 5,000 relative to FY10 encounters Metric: UCSFMC administrative data on patient encounters <u>Data Source:</u> Registry, EMR, claims or other DPH source;. Rationale/Evidence measures increased volume. 	<ul style="list-style-type: none"> Milestone (<i>process measure v</i>): Recruit 2 additional primary care provider FTEs (total of 6). Metric: UCSFMC HR records and clinic provider scheduling records. Milestone(<i>improvement measure ii</i>): Increase patient encounters at UCSFMC primary care clinics by 7,500 relative to FY10 encounters Metric: UCSFMC administrative data on patient encounters <u>Data Source:</u> Registry, EMR, claims or other DPH source;. Rationale/Evidence measures increased volume. 	<ul style="list-style-type: none"> Milestone (<i>improvement measure ii</i>): Increase patient encounters at UCSFMC primary care clinics by 10,000 relative to FY10 encounters. Metric: UCSFMC administrative data on patient encounters. <u>Data Source:</u> Registry, EMR, claims or other DPH source;. Rationale/Evidence measures increased volume. 	<ul style="list-style-type: none"> Redesign Primary Care (Cat. 2) Improve Cancer Screening Rates (Cat. 3) Improve Chronic Care Management and Outcomes (Cat. 3) Increase timely access (Cat. 3)

Category 1: Implement and Utilize Disease Management Registry Functionality

Goal:

The Chronic Care Model, developed by Ed Wagner and colleagues at the MacColl Institute, has helped many providers improve care for people with chronic conditions.¹ Randomized trials of system change interventions include Diabetes Cochrane Collaborative Review and JAMA review, which looked at about 40 studies, mostly randomized trials, with interventions classified as decision support, delivery system design, information systems, or self-management support; 19 of 20 studies included a self-management component improved care, and all five studies with interventions in all four domains had positive impacts on patients.² One of the key infrastructure components that support decision support and delivery system redesign is a well-functioning, electronic patient registry. A registry populated with essential demographic, clinical process, and clinical outcome data on patients with specified chronic conditions provides a tool for the primary care practice team and health delivery system to identify patients due for periodic tests (e.g., HA1C or lipid testing) and patients with outlier values indicating inadequate control of their chronic condition and the need for more proactive outreach, treatment intensification, and self-management support. Registries have also proved to be equally valuable for proactive, population management of preventive care services.

Specific Challenges: Currently UCSFMC does not have an Electronic Medical Record (EMR) with registry functionality.

Major Delivery System Solutions to Address Challenges: The challenges will be met by the implementation of the new EPIC EMR at UCSFMC (known as APeX, Advancing Patient centered Excellence), with initial EMR implementation occurring in April 2010 at several UCSFMC primary care practices. The adoption of the APeX EMR will allow us to develop and implement an EMR-based registry. Development of electronic registries with embedded decision support tools will also permit UCSFMC to deploy medical assistant panel managers as part of the re-engineered primary care medical home model discussed in Category 2: Innovation and Redesign.

Starting Point/Benchmark: A formal registry currently does not exist.

The specific goals for this proposed project are to implement chronic and preventive care registry functionality in the new APeX EMR and roll out utilization of this registry by panel managers and other staff at the UCSFMC primary care practices.

Expected result:

By the end of year 5, UCSFMC will have implemented fully functional patient registries in the APeX EMR at all its primary care practices, populated the registries with essential patient demographic, utilization and clinical data, and used the registry to improve quality metrics for a preventive care (colorectal cancer screening in adults and immunizations for children) and for care of patients with diabetes.

¹ Source: Institute for Healthcare Improvement (IHI) website, <http://www.ihl.org/IHI/Topics/ChronicConditions/AllConditions/Changes/>.

² Renders et al, Diabetes Care, 2001; 24:1821 and Bodenheimer, Wagner, Grumbach, JAMA 2002; 288:1910.

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Relation to Categories 2 and 3:

Implementing and utilizing patient registries is an essential infrastructure for achieving the project goals in Category 2 – Innovation and Redesign and Category 3– Population Focused Improvement. The registry will be a key tool in reliably improving the preventative and chronic care metrics in the primary care population.

Category 1: Implement and Utilize Disease Management Registry Functionality					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
<ul style="list-style-type: none"> Milestone (process measure i): Review current registry capability and assess future needs. Metric: Documentation of review of current registry capability and assessment of future registry system needs. 	<ul style="list-style-type: none"> Milestone (improvement measure i): Populate registry with patient data at 2 of 5 (40%) primary care practices to create registry for patients enrolled in those practices. Metric: <u>Numerator:</u> number of UCSFMC primary care practice sites w/ registry functionality. <u>Denominator:</u> Total number of UCSFMC primary care practice sites. <u>Data source:</u> Documentation of registry installation. Milestone (improvement measure i): Enter patient data into registry at these 2 practices for at least 75% of patients at the practice with diabetes and 75% of patients eligible for colorectal cancer screening (aged 50-75). Metric: <u>Numerator:</u> number of patients in 2 practices w/diabetes or eligible by age (50-75yrs of age) for colorectal cancer screening, entered into registries. <u>Denominator:</u> number of 	<ul style="list-style-type: none"> Milestone (improvement measure i): Populate registry with patient data at 4 of 5 (80%) primary care practices to create registry for patients enrolled in those practices. Metric: <u>Numerator:</u> number of UCSFMC primary care practice sites with registry functionality. <u>Denominator:</u> Total number of UCSFMC primary care practice sites. <u>Data source:</u> Documentation of registry installation. Milestone (improvement measure i): Enter patient data into registry at these 4 practices for at least 75% of patients at the practice with diabetes and 75% of patients eligible for colorectal cancer screening (aged 50-75). Metric: <u>Numerator:</u> number of patients in the 4 practices with diabetes or eligible by age (50-75 years of age) for colorectal cancer screening, entered into registries. <u>Denominator:</u> number of 	<ul style="list-style-type: none"> Milestone (improvement measure i): Populate registry w/ patient data at 5 of 5 (80%) primary care practices to create registry for patients enrolled in those practices, w/ final practice included being pediatrics practice. Metric: <u>Numerator:</u> number of UCSFMC primary care practice sites w/ registry functionality. <u>Denominator:</u> Total number of UCSFMC primary care practice sites. <u>Data source:</u> Documentation of registry installation. Milestone (improvement measure i): In addition to adult patient data entered in previous 4 primary care practices, enter patient data into registry at pediatrics practice to track immunization status, including registry data for at least 75% of active young children in the practice Metric: <u>Numerator:</u> number of children ages 2 mo-6 yrs 	<ul style="list-style-type: none"> Milestone (improvement measure i): Expand child immunization registry to include young children cared with medical homes at family medicine practice, so that 100% of UCSF primary care practices serving children have an immunization registry. Metric: <u>Numerator:</u> number of UCSFMC primary care practice sites serving children with registry functionality. <u>Denominator:</u> Total number of UCSFMC primary care practice sites serving children. <u>Data source:</u> Documentation of registry installation. Milestone (improvement measure i): Enter patient data into registry at all practices serving children to track immunization status, including registry data for at least 75% of active young children in the practice. Metric: <u>Numerator:</u> number of children ages 2 months-6 years entered into the 	<ul style="list-style-type: none"> Redesign Primary Care (Cat. 2) Improve Cancer Screening Rates (Cat. 3) Improve Chronic Care Management and Outcomes (Cat. 3) Increase timely access (Cat. 3)

Category 1: Implement and Utilize Disease Management Registry Functionality					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
	these patients in these 2 categories assigned to these practices for primary care. <u>Data source:</u> registry and EMR.	these patients in these 2 categories assigned to these practices for primary care. <u>Data source:</u> registry and EMR.	entered into the registry. <u>Denominator:</u> number of children ages 2 months-6 years assigned to pediatric clinic for primary care. <u>Data source:</u> registry and EMR.	registry. <u>Denominator:</u> number of children ages 2 months-6 years assigned to a UCSFMC primary care practice serving children. <u>Data source:</u> registry and EMR.	

Category 1: Enhance Performance Improvement and Reporting Capacity

Goal:

The goal is to establish an enterprise wide strategy for information management and business intelligence, including a roadmap to achieve it. UCSFMC aims to capitalize on the opportunity presented by an electronic medical record (EMR) and develop a new paradigm for data capture and management. An additional goal is to strip away the silos of information, and integrate data into a unified warehouse enhancing the efficiency by which clinical and operational reporting and analytic activities are conducted. Special attention and priority will be directed towards data reflecting the “Bridge to Reform” initiatives.

Specific Challenges: UCSFMC information architecture and 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. It is estimated that 70% of time is spent in processing information, and 30% applying the information to planning, operations and decisions. This is particularly challenging with a fragmented medical record and lack of integration between inpatient and outpatient settings. This significantly affects population management of our most fragile patients. Additionally, the skilled personnel to analyze the complex data we collect are underdeveloped.

Major Delivery System Solutions to Address the Challenges:

1. Conduct an inventory of the key data sources, reporting efforts and platforms.
2. Select an information technology solution to support data management and production of balanced scorecards.
3. Produce meaningful reports and templates utilized to reflect performance and drive change. Starting with one or two initiatives, this intervention will ultimately provide information for all key initiatives in the “Bridge to Reform” project set and other key organizational initiatives. This will enable front line staff as well as executive stakeholders to manage against data, increase assigned accountability, adjust interventions/approaches based on data and celebrate success.
4. Retrain/recruit/hire/train staff to assist in achieving our plan.
5. Shift the manpower effort from data collection and manipulation to performance improvement activities.

Starting Point/Benchmark: Limited data warehouse capability.

Expected Result:

Targeted inpatient clinical services or populations have a performance dashboard reflecting key performance indicators in quality, patient experience and efficiency. Meaningful reports are available within the organization to define current state and drive performance improvement. Strategic quality improvement projects are supported by a performance improvement teams and a centralized reporting structure.

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Relation to Category 3 Population-Focused Improvement:

Expanded reporting capacity will enable capture of broader process and outcome information that is critical for improving performance on both ambulatory and inpatient population outcomes.

Category 1: Enhance Performance Improvement and Reporting Capacity					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
<ul style="list-style-type: none"> Milestone (process measure iii): Develop reporting methodologies that will enable continuous quality improvement. Metric: A report for one target populations will be produced to reflect transitions in care. Milestone (additional process measure i): Participate in a collaborative. Metric: Collaborative membership and participation documentation. 	<ul style="list-style-type: none"> Milestone (process measure vii): Hire/train 2 staff in well proven quality and efficiency improvement principles, tools and processes. Metric: Number of staff hired and/or trained. Milestone (improvement measure i): Implement quality improvement (QI) data systems, collection, and reporting capabilities. Metric: Develop reports reflecting QI work: SSI, CLABSI, HAPU, Sepsis and for a one additional transitions population. <u>Data Source:</u> QI data systems. 	<ul style="list-style-type: none"> Milestone (process measure vii): Hire/train 1 staff in proven quality & efficiency improvement principles, tools & processes. Metric: Number of staff hired and/or trained. Milestone (improvement measure i): Implement QI data systems, collection, and reporting capabilities. Metric: Develop a reports reflecting QI work for <u>two</u> additional targeted populations <u>Data Source:</u> QI data systems. 	<ul style="list-style-type: none"> Milestone (process measure v): Participate in/present to quality performance improvement conferences, webinars, learning sessions or other venues. Metric: Produce "learning event" agendas Milestone (improvement measure i): Implement QI data systems, collection, and reporting capabilities. Metric: Develop reports that reflect QI work for <u>two</u> additional targeted populations. <u>Data Source:</u> QI data systems. 	<ul style="list-style-type: none"> Milestone (improvement measure ii): Create a quality dashboard or scoreboard to be shared with organizational leadership on a regular basis that includes patient satisfaction measures. Metric: Quality dashboard reflecting status of all key "bridge to reform" initiatives. <u>Data Source:</u> QI data systems. 	<ul style="list-style-type: none"> Reduce Readmissions (Cat. 3) Reduce Sepsis, CLABSI, SSI and HAPU (Cat. 4) Primary Care Medical Home

Category 2: Expand Medical Homes

Goal:

In addition to increasing capacity, UCSFMC primary care clinics must fundamentally redesign their model of care to transform themselves into high performing, Patient Centered Medical Homes (PCMHs). A review of recent US PCMH initiatives in the private and public sector found that redesigned PCMH care models were successful in achieving the “triple aims” of health reform: better clinical outcomes, better patient experiences, and lower costs. This review found that investment in primary care innovation yielded an excellent return on investment by reducing use of expensive emergency department and inpatient hospital services through well-coordinated and accessible primary care and better management of chronic conditions. Three key elements of PCMHs emerged from this review as having particularly high value for the triple aims of health reform: 1) proactive panel management, 2) primary-care embedded case managers for high risk patients, and 3) medical assistants and other staff trained for new team-based models of primary care.

Specific Challenges: Many of the patients who receive specialty care at UCSFMC do not have a clearly identified primary care medical home, contributing to fragmentation of care and inefficient use of specialty services for needs that could be more appropriately managed in primary care. Emblematic of this problem are patients with special needs arising in childhood (e.g., patients with developmental disabilities, congenital anomalies) that have aged out of pediatric care. There is a large unmet need for transitions from pediatric to adult medical homes for these patients—many of whom are insured by Medi-Cal and have received primary and specialty pediatric care at the UCSF Benioff Children’s Hospital and clinics. In addition, many adult fee-for-service Medi-Cal beneficiaries with chronic care needs have also been cared for in our adult specialty services without having a clearly identified primary care medical home, and will require more formal linkage with primary care as Seniors and Persons with Disabilities (SPD) populations move into managed Medi-Cal plans in June 2011.

Major Delivery System Solutions to Address the Challenges:

1. Expand and redefine the roles of the primary care team members, focusing on training medical assistants to function in an expanded role as panel managers and training nurses in care management of high risk patients in all UCSFMC primary care clinics;
2. Link high need patients to primary care medical homes, focusing in particular on SPD patients, including young adults with childhood-onset disabling conditions, who use UCSFMC specialist services but do not have a primary care medical home; and
3. Perform population health management by identifying and reaching out to patients who need preventive and chronic care services, with an emphasis on newly trained panel managers and nurse care managers using the registry functionality as a tool for more effective population management and outreach.

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UCSFMC has internationally recognized leaders in primary care policy and practice transformation. One key resource for this transformation is the UCSFMC Center for Excellence in Primary Care, directed by Tom Bodenheimer, MD, MPH. Dr. Bodenheimer is an experienced primary care clinician, prolific author, and widely recognized as one of the world's leading innovators in primary care. The Center has been an incubator of primary care innovation and has developed many tools and resources to facilitate practice transformation in primary care. Center faculty and staff have been engaged by systems such as the San Francisco Community Health Network, San Francisco's public safety net delivery system, to provide technical assistance for implementing panel management, patient self-management coaching, and other interventions. Dr. Bodenheimer and the Center for Excellence in Primary Care will be a key resource for our proposed projects in primary care. We have also established an Office of Developmental Primary Care to pilot approaches to develop capacity and enhance interdisciplinary training for the care of patients with developmental disabilities, particularly as they transition out of pediatric care settings. This Office will help to organize efforts on linking patients with primary care homes with an emphasis on transition aged patients with developmental disabilities and other chronic conditions with an onset in childhood.

Starting Point/Benchmark: Most components of UCSFMC's medical home currently not implemented.

Expected result:

UCSFMC primary care clinics will become high performing PCMHs, featuring innovative team models with personnel well-trained in panel management, patient health coaching, and care management, and with at least 250 SPD patients newly linked to primary care medical homes.

Relation to Categories 1 and 3:

The increased number of primary care providers and the proposed Registry Electronic Medical Record (EMR) functionality proposed in Category 1 – Infrastructure Development, will support the innovative team models called for in this proposal for Category 2 – Innovation and Redesign. Transforming clinics into PCMHs will also advance the goals of Category 3 – Population Focused Improvement for milestones focused on improving processes and outcomes in preventive and chronic care.

Category 2: Expand Medical Homes					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
<ul style="list-style-type: none"> Milestone (process measure viii): Develop training materials for panel managers/health coaches and care managers. Metric: Documents 	<ul style="list-style-type: none"> Milestone (process measure ix): Train 3 MEAs/health workers in panel management and health coaching, deploy in 	<ul style="list-style-type: none"> Milestone (process measure ix): Train 3 additional MEAs/health workers in panel management and health coaching, deploy in UCSFMC primary care clinics. Metric: UCSFMC HR records. 	<ul style="list-style-type: none"> Milestone (process measure ix): Train 3 additional MEAs/health workers in panel management and health coaching, deploy in UCSFMC primary care clinics. Metric: UCSFMC HR records. 	<ul style="list-style-type: none"> Milestone (process improvement ix): train 2 additional RN case managers in case management of high risk patients and deploy in UCSFMC primary care clinics. 	<ul style="list-style-type: none"> Expand Primary Care Capacity (Cat. 1) Implement and Utilize Disease Management Registry Functionality

Category 2: Expand Medical Homes					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
<p>and online tools available at UCSFMC.</p>	<p>UCSFMC primary care clinics Metric: UCSFMC HR records.</p> <ul style="list-style-type: none"> • Milestone(<i>process measure ix</i>): Train 1 RN case managers in case management of high risk patients and deploy in UCSFMC primary care clinics. Metric: UCSFMC HR records. • Milestone (<i>improvement measure i</i>): Link at least 50 SPD patients without UCSFMC primary care visits in FY10 to primary care medical homes at UCSFMC. Metric: Number of SPD patients with an assigned UCSFMC primary care medical home. <u>Data Source:</u> UCSFMC practice management system. 	<ul style="list-style-type: none"> • Milestone(<i>process improvement ix</i>): Train 1 additional RN case managers in case management of high risk patients and deploy in UCSFMC primary care clinics Metric: UCSFMC HR records. • Milestone(<i>improvement measure i</i>): Link at least 75 additional SPD patients without UCSFMC primary care visits in FY10 to primary care medical homes at UCSFMC. Metric: Number of SPD patients with an assigned UCSFMC primary care medical home. <u>Data source:</u> UCSFMC practice management system. • Milestone (<i>process measure v</i>): Panel managers/health coaches actively managing registries for colorectal cancer screening for at least 1,000 UCSFMC primary care patients and registries for chronic care for 500 UCSFMC primary care patients with diabetes Metric: Automated EMR patient registries for preventive services and diabetes management, and panel manager case load logs. • Milestone(<i>process measure v</i>): 150 high risk UCSFMC primary care patients have assigned care manager teams Metric: Care manager registries. 	<ul style="list-style-type: none"> • Milestone(<i>process measure v</i>): Panel managers/health coaches actively managing registries for colorectal cancer screening for at least 1,500 UCSFMC primary care patients and registries for chronic care for 1,000 UCSFMC primary care patients with diabetes. Metric: Automated EMR patient registries for preventive services and diabetes management, and panel manager case load log. • Milestone(<i>process improvement ix</i>): train 1 additional RN case manager in case management of high risk patients and deploy in UCSFMC primary care clinics. Metric: UCSFMC HR records. • Milestone(<i>improvement measure i</i>): Link at least 75 additional SPD patients without UCSFMC primary care visits in FY10 to primary care medical homes at UCSFMC. Metric: Number of SPD patients with an assigned UCSFMC primary care medical home. <u>Data source:</u> UCSMC practice management system. 	<p>Metric: UCSFMC HR records.</p> <ul style="list-style-type: none"> • Milestone(<i>improvement measure i</i>): Link at least 50 additional SPD patients without UCSFMC primary care visits in FY10 to primary care medical homes at UCSFMC Metric: Number of SPD patients with an assigned UCSFMC primary care medical home. <u>Data source:</u> UCSFMC practice management system. • Milestone (<i>process measure v</i>): Panel managers/health coaches actively managing registries for colorectal cancer screening for at least 2,000 UCSFMC primary care patients and registries for chronic care for 1,500 UCSFMC primary care patients with diabetes. Metric: Automated EMR patient registries for preventive services and diabetes management, and panel manager case 	<p>(Cat 1)</p> <ul style="list-style-type: none"> • Improve Cancer Screening Rates (Cat. 3) • Improve Chronic Care Management and Outcomes (Cat. 3) • Reduce Avoidable ED use and hospitalizations (Cat. 3)

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Category 2: Expand Medical Homes					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
			<ul style="list-style-type: none"> Milestone(<i>process measure v</i>): 150 high risk UCSFMC primary care patients have assigned care manager teams. Metric: Care manager registries. 	load logs. <ul style="list-style-type: none"> Milestone (<i>process measure v</i>): 250 high risk UCSFMC primary care patients have assigned care manager teams. Metric: Care manager registries. 	

Category 2: Increase Specialty Care Access/Redesign Referral Process

Goal:

A critical component of a well functioning integrated delivery system is the ability of patients to receive timely specialty consultation and care when appropriate. A corollary feature is that the process by which a specialty referral is made needs to be transparent, predictable and efficient for patients, referring providers, and specialty programs alike. Our specialists provide service to patients and referring primary providers from within the UCSFMC system and to patients and providers from the greater San Francisco Bay Area and beyond. The majority of referrals for specialty care from within the UCSFMC system are for so called “secondary specialty care” such as general dermatology or general neurology whereas referrals from outside of the UCSFMC system tend to be for “tertiary specialty care” such as cystic fibrosis, multiple sclerosis, and solid organ transplant programs. We will be expanding our primary care capacity as part of a Category 1 (Infrastructure Development) project. Thus, the demand for specialty care will increase over the next 5 years.

Specific Challenges: The current process for making a specialty referral is considered cumbersome for referring providers and patients alike and is in need of fundamental redesign in order to effectively meet the needs of existing and future UCSFMC patients. Our baseline data demonstrate that the time from a new specialty appointment request to the time at which an appointment is formally scheduled (the appointment scheduling lag) is often several days or even a few weeks for some programs. In addition, the time from an initial request until the actual appointment occurs is often greater than 30 days. UCSFMC uses a metric called the 3rd available appointment to measure access for new patient appointments. Presently 3rd available appointment for several impacted specialty clinics averages over 30 days. Fundamental referral and clinic workflow redesign may be insufficient to increase capacity to meet the specialty care demand from an increased primary care population. If this is the case, additional specialty care providers will need to be added.

Major Delivery System Solutions to Address the Challenges: For an estimated 10-20% of requests for specialty consultation, an in-person appointment may be unnecessary. Such situations arise when a patient and/or referring provider have a specific question or questions regarding a diagnostic plan, treatment options, and clinical trial availability. The most efficient and cost effective approach in these cases would be an electronic or telephonic consultation in which the specialist can efficiently provide expert input without the need for an in person visit. An e-referral system is currently in place at San Francisco General Hospital and has been shown to be effective and efficient³. Such a system would be most appropriate for secondary specialty referrals that come from within the UCSFMC system for which there is a shared medical record.

Starting Point/Benchmark: 3rd available appointment metric averages over 30days for the most impacted clinics.

³ Kim-Hwang JE, Chen AH, Bell DS, Guzman D, Yee HF Jr, Kushel MB, Evaluating electronic referrals for specialty care at a public hospital. *J Gen Int Med*, 2010 Oct;25(10):1123-8.

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Our specific goals are two-fold:

1. To redesign the specialty referral process for a subset of UCSFMC specialty clinics in order to reduce the appointment scheduling lag to less than and reduce the 3rd available appointment time, thus improving access for new patients.
2. To develop and implement an e-referral program in a subset of UCSFMC specialty clinics.

Expected Result:

By the end of year 5, at least 8 UCSFMC specialty programs will have undergone in-depth process redesign such that the scheduling lag is less than 5 days for new patients and 3rd available appointment for new patients less than 14 days, and e-referral programs will be implemented in at least 4 specialty programs.

Relation to Category 3:

Timely and efficient specialty care is critical to improving the health of a primary care population of patients. Care coordination and chronic illness care in particular require the input and participation of specialty physicians.

Category 2: Increase Specialty Care Access/Redesign Referral Process					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Intervention
<ul style="list-style-type: none"> • Milestone (generic process measure x): Designate personal/team to support and manage the specialty access project. Metric: Documentation of personnel identified to manage and/or substantially contribute to the specialty access project. <u>Data Source:</u> UCSFMC planning 	<ul style="list-style-type: none"> • Milestone (process measure i): Develop and implement standardized referral evaluation and processing guidelines for four specialty clinics. Metric: Documentation of guidelines. <u>Data Source:</u> Referral policy and procedures document. • Milestone (process measure ii): Complete a planning process/submit a 	<ul style="list-style-type: none"> • Milestone (process measure i): Develop and implement standardized referral evaluation and processing guidelines for two additional specialty clinics. Metric: Documentation of guidelines. <u>Data Source:</u> Referral policy and procedures document. • Milestone (improvement measure v): Measure wait times for specialty care appointments in the four initial specialty clinics. Metric: The percentage of referrals seen/evaluated by a medical specialist within a defined time period since 	<ul style="list-style-type: none"> • Milestone (improvement measure v): Measure wait times for specialty care appointments in two additional clinics. Metric: The percent of referral seen/evaluated by a medical specialist within a defined time period since referral initiation. <u>Numerator:</u> The number of patients evaluated by a specialist within a defined time period. <u>Denominator:</u> The total number of patients evaluated by a specialist. <u>Data Source:</u> Appointment scheduling software. • Milestone (process measure i): Develop and implement 	<ul style="list-style-type: none"> • Milestone (improvement measure v i): Measure the number of specialty care referrals that result without a clinic visit. Metric: The proportion of referrals completed without an in person clinic visit for clinics using e-referral system. <u>Numerator:</u> Number of referrals completed without a visit. <u>Denominator:</u> Total number of referred patients. <u>Data Source:</u> scheduling software system • Milestone (improvement measure ix): Achieve standards for specialty care access. 	<ul style="list-style-type: none"> • Increase primary care (Cat. 1)

Category 2: Increase Specialty Care Access/Redesign Referral Process					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Intervention
documents.	<p>plan to implement electronic referrals.</p> <p>Metric: Development of a plan for managing and staffing an e-referral program in one specialty clinic. <u>Data Source:</u> e-referral plan.</p> <ul style="list-style-type: none"> Milestone(process measure iii): Develop the technical capabilities to facilitate electronic referrals. Metric: Demonstrate technical mechanisms utilized in operation of the e-referral program. 	<p>referral initiation.</p> <p><u>Numerator:</u> The number of patients evaluated by a specialist within a defined time period. <u>Denominator:</u> The total number of patients evaluated by a specialist. <u>Data Source:</u> Appointment scheduling software.</p> <ul style="list-style-type: none"> Milestone(improvement measure i): Implement specialty care access programs; e-referral in at least 2 specialty clinics. Metric: Number of medical specialty clinics with specialty care access programs. <u>Numerator:</u> number of medical specialty clinics with e-referral program operational. <u>Denominator:</u> total number of medical specialty clinics. <u>Data Source:</u> Written processes for specialty care access programs, documentation of use of access program in patient record. <u>Data Source:</u> Appointment scheduling software. 	<p>standardized referral evaluation and processing guidelines for two additional specialty clinics</p> <p>Metric: Documentation of guidelines. <u>Data Source:</u> Referral policy and procedures document</p> <ul style="list-style-type: none"> Milestone(improvement measure i): Implement specialty care access programs; e-referral in at least 2 additional specialty clinics. Metric: Number of medical specialty clinics with specialty care access programs. <u>Numerator:</u> number of medical specialty clinics with e-referral program operational. <u>Denominator:</u> total number of medical specialty clinics <u>Data Source:</u> Written processes for specialty care access programs, documentation of use of access program in patient record. <u>Data Source:</u> Appointment scheduling software. 	<p>Metric: The number of patients that are seen in medical specialty clinics within the number of days established to meet standards for specialty care in all specialty clinics that have implemented either referral redesign or e-referral. <u>Numerator:</u> The number of patients seen in medical specialty clinics within the standard time frame. <u>Denominator:</u> The total number of patients seen in specialty clinics. <u>Data Source:</u> Scheduling software.</p>	

Category 2: Implement/Expand Care Transitions Programs

Goal:

UCSFMC proposes to create a comprehensive, organization-wide care transitions program that will consistently and effectively integrate the hospitalization with a safe transition to “home” as an episode of care and thus, reduce the rate of readmissions.

Specific Challenges: We face three specific challenges in meeting the needs of our patients, improving transitions of care and reducing readmissions. (1) The patterns and causes of readmissions at UCSFMC are not fully understood. Administrative data have not been thoroughly analyzed to determine high level correlates that would direct targeted interventions. Most clinical services are not focused on preventing readmission rates or aware of patterns of readmissions within their populations. Likewise, the staff on each nursing unit do not know their patient’s readmission rates, nor do they fully understand the elements that make a patient at high risk for readmission. We do know, however the high rate at which readmitted patients use the emergency department as a post hospitalization safety net. Additionally, patients have not been queried to determine what they believe contributed to readmissions, for example, psychosocial issues, inadequate follow-up or problems with medications. These are two significant sources of information that could drive improvements in care and reduce readmissions. (2) Evidence based best practices to optimize the transition from hospital to home are not uniformly implemented. Many best practices have been published and tested on a small scale at UCSFMC. The personnel infrastructure does not exist to implement these practices beyond the targeted populations in study groups, described in the next section. Roles and responsibilities on the general acute and pediatric nursing units are not clearly defined and are limited in scope to the confines of the hospital. Staff are unaware and/or ill prepared to plan a patient’s discharge to meet the complexities of care outside the hospital setting. Post discharge appointments are difficult to make, especially when specialty care is needed. (3) There is poor communication between outside facilities, home care agencies and UCSFMC. Complex patient problems are managed by new physicians and nurses who rely on written documents to carry out the discharge plans of care. Currently there are few medical home options for patients at UCSFMC.

Major Delivery System Solutions to Address the Challenges: The new UCSFMC Transitions in Care Program will identify key contributors to the our current rate of readmission by thorough analysis of administrative and clinical data, patient interviews and implementation of evidence based practices to optimize safe discharges and reduce readmissions.

UCSFMC Transitions of Care System will integrate the work of successful applied research in chronic disease management and avoidable readmissions best practices, bringing the discharge process to a new level of consistency, reliability and excellence. Through the use of data and reports, teams will receive feedback on the impact of their performance and be held accountable for the metrics of their unit micro system.

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Team members will target interventions in the following areas to create a new standard of care:

1. Early identification of needs: enhanced assessment for post-discharge needs will be conducted at the time of admission. This assessment will be conducted by a case manager, as the first contact point for discharge planning.
2. Multi-disciplinary teams will work together to prepare the patient for discharge: the role of each team member will be clearly defined in the context of the discharge process including medication reconciliation and teaching. This will reduce redundancy of effort and favor accountability within the unit micro system. The team will consist of a physician, nurse, case manager, pharmacist, and unit administrative assistants with outreach to outpatient partners (home care, hospice, skilled nursing facility staff, referring and primary care providers). Staff will be augmented to provide adequate coverage for the delineated transitions responsibilities with focused resources to high risk populations (e.g. patients with heart failure, cancer, diabetes, anticoagulation, transplants).
3. Individual targeted plans will be developed for high risk patients to mitigate risks and create post discharge care plans that will be communicated and coordinated with outpatient partners.
4. Revision of discharge materials and education will be addressed: Teach-back method of education will become the standard. There will be an increased use of two way interpreter phones to address any language barriers both in the hospital and in home care settings.
5. Medication reconciliation and education: Medication reconciliation will be done for every patient. The teach-back method will be used to communicate to the patient, family or parent. A current medication list will be provided to the patient and the next provider of care.
6. Bridging the gaps to the outpatient setting: Post discharge appointments will be made within 7-14 days or as appropriate for the patient condition. Concurrent measures proposed through this waiver process will allow for increased access to primary and specialty care providers and primary care medical homes.
7. Routine directed post discharge phone calls will become standard of care.
8. Earlier introduction of Palliative Care Consultation and Hospice as a care option for appropriate patients.
9. Leverage technology to standardize transition of care information flow and reports.

On an organizational level, UCSFMC will develop collaborative relationships with local skilled nursing facilities and home care agencies to reduce readmissions for patients discharged to Skilled Nursing Facility (SNF) or Home Care. A collaborative program would include an increased presence of our providers (e.g. an NP) at local SNFs and increased presence of liaisons from local home care agencies and SNFs at UCSFMC. A relationship will be developed with the primary medical homes outlined in the aforementioned Category 2 Medical Homes proposal.

A five-year implementation plan will be established to reach outcome goals. Due to the complexity of medical issues and processes that contribute to readmission, we propose that interventions be multipronged and interdisciplinary. A transitions program would include physicians, nurse practitioners, clinical nurse specialists, pharmacists, nurses, case managers, social workers, the ambulatory providers

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(including physicians and nurse practitioners) as well as partners in the community such as homecare agencies and skilled nursing facilities. Best practices will be targeted to all patients and specific programs may be developed to meet the needs of specific, high risk, patient populations.

Expected Result:

85% of targeted populations benefit from standard transition care processes.

Relation to Category 3 Population-Focused Improvement:

Standardizing the discharge and post discharge follow-up process for our large population of hospitalized patients will best prepare them for independence and help to reduce the 30-day all cause readmission rate. In addition to the transition program’s specific elements outlined below, the program will link to and capitalize on other work being proposed by UCSFMC for the Medicaid Waiver, specifically the primary care medical home, increased specialty care access, and communications with patients and other care providers.

Category 2: Implement/Expand Care Transitions Programs					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
<ul style="list-style-type: none"> • Milestone (process measure i): Develop protocols for effectively communicating with patients and families during and post discharge to improve adherence to discharge and follow-up instructions. Metric: Care transition protocol approved and implemented for a defined CHF population. • Milestone (improvement measure ii): Begin monthly data collection and reporting for chosen metrics. Metric: <u>Numerator:</u> number of patients in 	<ul style="list-style-type: none"> • Milestone (process measure vii): Develop a staffing and implementation plan to accomplish the goals/objectives of the care transitions program. Metric: Staffing and implementation plan. • Milestone (improvement measure i): Implement standard care transition processes in one additional patient population. Metric: Measure adherence to processes. <u>Numerator:</u> 	<ul style="list-style-type: none"> • Milestone (process measure iv): Conduct an assessment and establish linkages with community-based organizations to create a support network for targeted patients post-discharge. Metric: Submission of assessment. • Milestone (improvement measure i): Implement standard care transition processes in two additional patient populations. Metric: Measure adherence to processes. <u>Numerator:</u> Number of 	<ul style="list-style-type: none"> • Milestone (generic process measure v): Redesign the process in order to be more effective; incorporating learnings, at least one new element into the process based on the assessment, using the process modification process to include the specificity needed as learnings are discovered in DY 8. • Milestone (improvement measure ii): Begin monthly data collection and reporting for chosen metrics. Metric: Readmissions of targeted populations. 	<ul style="list-style-type: none"> • Milestone (generic process measure vii): Report shared learnings of the care transitions program to local or national stakeholders. • Milestone (improvement measure ii): Begin monthly data collection and reporting for chosen metrics. Metric: Number of readmissions of targeted populations. <u>Numerator:</u> Number of 	<ul style="list-style-type: none"> • Expand Primary Care (Cat 1) • Expand Specialty Based Care (Cat1) • Expand Medical Homes (Cat 2) • Reduce Readmissions (Cat. 3)

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Category 2: Implement/Expand Care Transitions Programs					
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)	Related Interventions
<p>targeted population who:</p> <ul style="list-style-type: none"> - Had a follow up phone call within 7 days of discharge. - Had a home care referral upon discharge. - Were readmitted within 30 days. <p><u>Denominator:</u> Targeted CHF population. <u>Data Source:</u> Hospital administrative data and the patient medical record.</p>	<p>Number of patients in defined population receives care according to standard protocol.</p> <p><u>Denominator:</u> Number of population patients discharged. <u>Data Source:</u> Hospital administrative data and the patient medical record.</p>	<p>patients in defined population receives care according to standard protocol.</p> <p><u>Denominator:</u> Number of population patients discharged. <u>Data Source:</u> Hospital administrative data and the patient medical record.</p>	<p><u>Numerator:</u> Number of patients in defined population who are readmitted within 30 days. <u>Denominator:</u> Total number of patients in defined population discharged. <u>Data Source:</u> Hospital administrative data.</p>	<p>patients in defined population who are readmitted within 30 days.</p> <p><u>Denominator:</u> Total number of patients in defined population discharged. <u>Data Source:</u> Hospital administrative data.</p>	

Category 4: Urgent Improvement in Quality and Safety

Intervention #1: Improve Severe Sepsis Detection and Management

Key Challenge: Reducing harm or death to patients seeking care due to sepsis.

Sepsis can harm and kill patients if not treated quickly. It results in an increased Intensive Care Unit (ICU) length of stay and its associated costs. Currently, approximately a quarter of patients with severe sepsis or septic shock die in public hospitals. UCSFMC was an early adopter of aggressive sepsis management starting in 2005. Using early goal directed therapies, we have been able to reduce sepsis mortality from 37.7% in 2003 to 29.18% mortality in 2009. This metric reflects the Integrated Nurse Leadership Program (INLP) definitions of sepsis. An additional 2% reduction was achieved in the first two quarters of calendar year 2010. 69% of our patients with sepsis have this condition on admission to the hospital.

Despite our improvement in management and resulting reduction in mortality rates, we still have room for improvement regarding compliance with evidence based elements and “bundles” of resuscitation and management.

Major Delivery System Solution: Reduce avoidable harm or deaths due to severe sepsis to patients receiving inpatient services.

In support of our commitment to continuous quality improvement so that patients receive the safest and highest quality health care possible, we propose to improve severe sepsis detection and management and reduce unnecessary death and harm attributable to sepsis. Interventions and improved processes will be based upon INLP and Institute for Healthcare Improvement (IHI) recommendations. This includes implementing both the Sepsis Management and Resuscitation Bundle components. We plan to take the following steps to achieve this goal:

1. Identify a multi-discipline team to lead the initiatives (conduct rapid cycle improvements, educate, report)
2. Establish a baseline of compliance with recommended bundles of care
3. Construct a screening tool (ED and Medical/Surgical areas) to allow for early identification of sepsis patients
4. Develop a process or protocol for use of the screening tool
5. Identify a trigger notification mechanism to alert appropriate care providers when sepsis is suspected
6. Agree on evidence based comprehensive management protocols
7. Develop reports for sepsis mortality measures and compliance with bundles of care

These interventions are aimed at making the elements of the sepsis bundles more reliable. Sepsis mortality will be closely monitored as an outcome measure.

Category 4: Improve Severe Sepsis Detection and Management				
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)
<p>Conduct and report a gap analysis of recommended practices compared to UCSFMC practices with regards to sepsis management and present it to our quality committee.</p> <p>Establish UCSFMC sepsis mortality baseline using the Integrated Nurse Leadership Program (INLP) definitions.</p>	<p>1. Implement the Sepsis Resuscitation Bundle, as evidenced by:</p> <ul style="list-style-type: none"> Blood cultures obtained prior to antibiotic administration Improve time to broad- spectrum antibiotics: within 3 hours for ED admissions and 1 hour for non-ED ICU admissions (<i>of initial septic presentation</i>) In the event of hypotension and/or lactate >4 mmol/L (36mg/dl): 1) Deliver an initial minimum of 20 ml/kg of crystalloid (or colloid equivalent) as appropriate (considering contraindications); 2) Apply vasopressors for hypotension not responding to initial fluid resuscitation to maintain mean arterial pressure (MAP) > 65 mmHg. <p><u>Data Source:</u> the patient medical record</p> <p>2. Report at least 6 months of data collection on Sepsis Resuscitation Bundle to SNI for purposes of establishing the baseline and setting benchmarks.</p> <p>3. Report the Sepsis Resuscitation Bundle results to the State.</p>	<p>4. Achieve X% compliance with Sepsis Resuscitation Bundle, where "X" will be determined in Year 2 based on baseline data.</p> <p>5. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>6. Report Sepsis Resuscitation Bundle and Sepsis Mortality results to the State.</p>	<p>7. Achieve X% compliance with Sepsis Resuscitation Bundle, where "X" will be determined in Year 2 based on baseline data.</p> <p>8. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>9. Report results to the State.</p>	<p>10. Achieve X% compliance with Sepsis Resuscitation Bundle, where "X" will be determined in Year 2 based on baseline data.</p> <p>11. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals.</p> <p>12. Report results to the State.</p>

Intervention #2: Central Line-Associated Bloodstream Infection (CLABSI) Prevention

Key Challenge: Reduce Central Line-Associated Bloodstream Infections (CLABSI)

It has become clear that interventions designed to diagnose and treat critically ill patients in hospitals are a cause of injury to patients. The use of central venous catheters is one of those interventions that, while affording life-saving therapy delivery, can cause significant morbidity, mortality and cost. More importantly, there are a number of straight-forward practices that can significantly reduce the rate of infection. These include specific practices for central line insertion and maintenance. UCSFMC implemented the Institute for Healthcare Improvement (IHI) central line insertion practices bundle in 2008 in our adult critical care units, where physicians and nurse practitioners attest to their compliance during central line insertion. We developed a *maintenance* bundle in 2010, based upon data we collected. Despite these interventions, we have yet to reach zero central line infections in all Intensive Care Units (ICUs) for more than two consecutive months. The adult CLABSI rate July to December 2009 was 1.6 infections per 1,000 central line days, which represents 11 patients with infections. There were 13 infections in our pediatric patients, a rate of 3.4 infections per 1000 patient days and a combined total infection rate of 2.2 infections per 1000 line days. Although we improved in the following year, with a July-December 2010 adult rate of 1.0 infections per 1,000 central line days, 7 adult patients developed a central line-related infection. With an attributable mortality rate up to 20% for CLABSI, and providing care for nearly 25,000 central line days per year, it is critical to identify, reduce and eliminate the factors that put our patients at risk for infection.

Major Delivery System Solution: Reduce avoidable harm or deaths due to central line insertions

CLABSI prevention has been our focus for in critical care units with demonstrated success in reducing rates by over 65% in 2 years. We are now broadening the CLABSI focus to include adult and pediatric acute care settings, by implementing best practice bundles from the literature and from our own data, measuring compliance with prevention bundles and applying rapid cycle improvement methods to identified challenges. We propose becoming a leader in the BEACON (adult) and NACHRI (children) collaboratives and reporting our results there and to the state.

Category 4: Central Line-Associated Bloodstream Infection (CLABSI) Infection Prevention (required)				
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)
<p>Redesign a process of care to improve performance.</p> <ul style="list-style-type: none"> Implement a neutral needless connector in the central IV line set up, to reduce opportunity for infection from line access. 	<ol style="list-style-type: none"> Implement the Central Line Insertion Practices (CLIP), as evidenced by: <p>(a) self-reported adherence to the insertion bundle for central lines in adult critical care units, including attestation of:</p> <ul style="list-style-type: none"> Hand hygiene performed Appropriate skin prep <ul style="list-style-type: none"> Chlorhexidene gluconate (CHG) for patients ≥ 2 months old Povidone iodine, alcohol, CHG, or other specified for children < 2 months old Skin prep agent has completely dried before insertion All 5 maximal sterile barriers used <ul style="list-style-type: none"> Sterile gloves Sterile gown Cap Mask worn Large sterile drape <p>(b) In addition, adult critical care nursing staff will document daily review of line necessity and discuss removal of unnecessary central lines with the physician.</p> Report at least 6 months of data collection on CLIP to SNI for purposes of establishing the baseline and setting benchmarks. Report at least 6 months of data collection on CLABSI to SNI for purposes of establishing the baseline and setting benchmarks. Report CLIP results to the State. 	<ol style="list-style-type: none"> Achieve X% compliance with CLIP, where "X" will be determined in Year 2 based on baseline data. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. Report CLIP and CLABSI results to the State. 	<ol style="list-style-type: none"> Achieve X% compliance with CLIP, where "X" will be determined in Year 2 based on baseline data. Reduce Central Line Bloodstream Infections by X%, where "X" will be determined in Year 2 based on baseline data. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. Report CLIP and CLABSI results to the State. 	<ol style="list-style-type: none"> Achieve X% compliance with CLIP, where "X" will be determined in Year 2 based on baseline data. Reduce Central Line Bloodstream Infections by X%, where "X" will be determined in Year 2 based on baseline data. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. Report CLIP and CLABSI results to the State.

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Intervention #3: Surgical Site Infection (SSI) Prevention

Key Challenge: Reduce Surgical Complications

The Surgical Care Improvement Project (SCIP) was initiated as a partnership between the Centers for Disease Control (CDC) and the Center for Medicare and Medicaid Services (CMS) to reduce surgical complications by 25% by 2010. The most significant surgical complications, in terms of combined frequency of occurrence and impact on individual patients, include surgical site infections (SSIs), cardiac events and venous thromboembolism events (VTEs). Beginning October 1, 2008, the CMS selected SSIs with select procedures and VTEs with joint replacement as hospital-acquired conditions that will no longer receive a higher reimbursement when not present on admission. SSIs occurring within 30 days after an operation have the second highest frequency of any adverse event occurring in hospitalized patients and are the third most common healthcare-associated infection (HAI). Surgical complication harm to patients is significant, resulting in increased mortality, readmission rate, length of hospital stay, and cost for patients who incur them. SSIs are associated with additional postoperative hospital days as well as increased mortality and hospital costs.

UCSFMC SCIP composite score performance, while high, is still highly volatile. CalHospitalCompare.org⁴ reports 97% score for UCSFMC in the date period of April 2009- March 2010. While this composite score compares favorably to state and national comparisons, we continue to have an opportunity to improve and stabilize this process. Our current participation in National Surgical Quality Improvement Program (NSQIP) demonstrates UCSFMC 30-day SSI rates in the selected general and vascular population (for period Jan through Dec 2009) to be below risk-adjusted expected rate; however, for multi-specialty population, UCSFMC SSI Occurrence/Exposure (O/E) rate is just above 1 with wide range 95% Confidence Interval (CI).

Major Delivery System Solution: Reduce Surgical Complications

UCSFMC is committed to provide the best care to our surgical patients with focus on reduction of SSI rates. Our targeted approach will consist of implementation and improved compliance with selected SSI indicators as measured by SSI composite scores and an assessment of the impact of these process measures on the SSI rate.

⁴ CalHospitalCompare.org website 01.05.2011

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Category 4: Surgical Site Infection (SSI) Prevention				
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)
Established an institutional surgical site infection and complication profile baseline for general surgery, vascular surgery and selected specialty surgical cases using the American College of Surgeon's National Surgical Quality Improvement Program (NSQIP) and presented the data to our quality committees.	<ol style="list-style-type: none"> 1. Report at least 6 months of data collection on SSI to California Health Care Safety Net Institute (SNI) for purposes of establishing the baseline and setting benchmarks. 2. Report results to the State. 	<ol style="list-style-type: none"> 3. Reduce the rate of surgical site infection for Class 1 and 2 wounds by X, where "X" will be determined in Year 2 based on baseline data. 4. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. 5. Report results to the State. 	<ol style="list-style-type: none"> 6. Reduce the rate of surgical site infection for Class 1 and 2 wounds by X%, where "X" will be determined in Year 2 based on baseline data. 7. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. 8. Report results to the State. 	<ol style="list-style-type: none"> 9. Reduce the rate of surgical site infection for Class 1 and 2 wounds by X%, where "X" will be determined in Year 2 based on baseline data. 10. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. 11. Report results to the State.

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Intervention #4: Hospital Acquired Pressure Ulcer (HAPU) Prevention

Key Challenge: HAPU prevention

HAPUs are a serious unintended consequence of hospitalization. 2.5 million patients are treated for complications of hospital acquired pressure ulcers that increase mortality rates and carry a cost of 11 billion dollars. According to the National Pressure Ulcer Advisory Panel (NPUAP), the prevalence of HAPUs is 10% to 18% in acute care settings, 2.3% to 28% in long-term care facilities, and as high as 29% in home care environments. In 2008, The Agency for Healthcare Research and Quality (AHRQ) reported that a HAPU can double or triple a patient's length of stay and costs \$16,000 to \$20,000 to treat. The Centers for Medicaid and Medicare Services (CMS) has estimated the cost of HAPUs per patient is closer to \$43,000 and has included HAPU on its list of acquired conditions for which it will not reimburse. Policies lead by CMS and The Joint Commission (TJC) are focusing on cost effective prevention initiatives.

UCSFMC's baseline FY 2009 adult HAPU (all stages except stage I; including stage II, stage III, stage IV) Unstageable and suspected deep tissue injury was 3.67%, with 54 patients and 1471 patient days. This rate was reduced in FY 2010 to 2.6% (40 patients/1474 patient days)

Major Delivery System Solution: Prevent avoidable HAPUs to patients receiving inpatient services

HAPU prevention has been one of UCSFMC's Patient Safety and Quality Organizational Goals since 2008. Monthly HAPU Incidence and Quarterly HAPU Prevalence Reports have been created and are generated and distributed throughout our medical center. All adult inpatient units have frontline staff "Unit Skin Champions" who self-audit pressure ulcer prevention process measures on a monthly basis. Using incidence, prevalence, and process measure data, each unit identifies opportunities, formulates and implements unit-based HAPU prevention action plans targeted to their specific patient populations. In order to continue to gain traction with our pressure ulcer prevention initiative, we need to target interventions specific to the unique skin care challenges of our complex critical care and perioperative patient populations. Plans proposed for these patient populations include establishing a process to ensure timely placement of patients on appropriate pressure redistribution surfaces, as well as formation of a process to ensure timely mobilization. Additionally, creation of a standardized process to optimize communication of "skin at risk" throughout a patient's continuum of care needs to be set up. We intend to become an innovative leader in preventing hospital acquired pressure ulcers in complex and diverse patient populations.

Category 4: Hospital-Acquired Pressure Ulcer (HAPU) Prevention				
Year 1 (DY-6)	Year 2 (DY-7)	Year 3 (DY-8)	Year 4 (DY-9)	Year 5 (DY-10)
<p>Educate at least 100 nurses on pressure ulcer prevention and wound care.</p> <p>Objectives focus on: Prevention, Identification, Treatment and Case Review Analysis.</p> <p>Education:</p> <ul style="list-style-type: none"> a. Patient and family focused management b. Risk assessment c. Skin Assessment d. Risk factors e. Systems approach to pressure ulcer prevention f. Staging g. Wound care 	<ol style="list-style-type: none"> 1. Share data, promising practices, and findings with California Health Care Safety Net Institute (SNI) to foster shared learning and benchmarking across the California public hospitals. 2. Report hospital-acquired pressure ulcer prevalence results to the State. 	<ol style="list-style-type: none"> 3. Achieve hospital-acquired pressure ulcer prevalence of less than 2.2 %. 4. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. 5. Report hospital-acquired pressure ulcer prevalence results to the State. 	<ol style="list-style-type: none"> 6. Achieve hospital-acquired pressure ulcer prevalence of less than 1.7 %. 7. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. 8. Report hospital-acquired pressure ulcer prevalence results to the State. 	<ol style="list-style-type: none"> 9. Achieve hospital-acquired pressure ulcer prevalence of less than 1.1%. 10. Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across the California public hospitals. 11. Report hospital-acquired pressure ulcer prevalence results to the State.

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