

University of Maryland Upper Chesapeake Health: Increased Value Under a Fixed Hospital Budget

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Executive Summary

University of Maryland Upper Chesapeake Health (UM UCH) participates in Maryland's Global Budget Revenue (GBR) program that fixes hospital revenue, regardless of volume. This has created much stronger financial pressure for hospitals to use resources more efficiently, since additional hospital services no longer translate into higher revenue. To limit acute hospital costs while maintaining or improving quality, UM UCH has implemented a variety of emergency department (ED), care coordination, and information technology interventions to improve care. These include developing a care pathway for low-risk chest pain, supporting post-discharge call backs, participating in a health information exchange, creating care plans for high-cost patients, and developing a post-emergency department (ED) and post-hospitalization clinic. These reforms have also required some reforms in how ED physicians are paid. To date, programs have been successful: care plans alone have reduced opioid prescriptions by 50% and hospital-based encounters in high-cost patients decreased by 40-50%.

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I. Program Overview

University of Maryland Upper Chesapeake Health (UM UCH) is a part of the University of Maryland Medical System and consists of two major hospitals, a cancer center, and an end-of-life facility in northeastern Maryland. Starting in 2014, UM UCH started participating in Maryland's Global Budget Revenue (GBR) model, an all payer model that provides a fixed payment to hospitals for all hospital-based outpatient and inpatient care.¹ GBR promotes population management in the form of a 40% penalty when overages exceed 0.5% of the fixed budget. In addition, hospitals must meet set targets for quality, safety, and patient experience.

In responding to this new payment model and other hospital priorities, a variety of interventions have been implemented to curb overuse of health care and hospital resources. The programs aim to empower ED physicians in the areas where they control hospital resources, specifically in determinations of who should be admitted to the hospital, kept for observation care, or discharged home. These decisions also impact the capacity and efficiency of the ED. Another area under the control of ED physicians is ED medication administration and prescribing, and the use of advanced radiography, such as CT scanning. The overall goal is to facilitate physicians' ability to make the most cost-conscious, and medically appropriate decision through providing incentives to take greater ownership of quality and outcomes, and provide additional resources to physicians to be successful.²

II. Care Delivery Redesign

There are 3 main ways to reduce acute care costs: 1) preventing acute health problems and the associated care from happening in the first place; 2) create and expand less costly (and hopefully more convenient) alternatives to ED care so people with acute problems use less expensive hospital-based care; and 3) improve the function of the acute care system itself. In conceptualizing the UM UCH approach to acute care services, it is important to understand several elements including care delivery redesign that incorporates all three of the strategies mentioned above, as well as the underlying payments and information systems that support these services. UM UCH interventions focused on vulnerable patients to ensure their care was optimized across settings:

High-Risk Care Plan Program. The High-Risk Care Plan program was developed to target frequent users of ED care. This included those who had over five ED visits, three admissions, or one readmission in any 12-month time period. Many of these patients had fractured care from a variety of facilities. Sometimes ED physicians would make care decisions without a complete understanding of the patients' overall care trajectory and underlying reasons for frequent ED use. The way the existing electronic medical record (EMR) was structured, it was often difficult to quickly determine what work-up patients had received for various complaints. The result was that patients often received duplicative care, and the underlying causes for frequent ED use such as mental health or social service needs were never completely addressed. In this program, high-risk patients were identified by case managers and referred to participate in the program. Case managers did investigative work including assembling a multi-disciplinary team that included the patient's primary care physician, pain management, psychiatrists, and ED physicians and developing an individualized care plan. The care plan was then distilled to one-page and incorporated into emergency physician workflow where it appeared prior to physician's

documenting in Forerun, the electronic physician documentation tool. This care plan summarizes relevant clinical data from a variety of resources including the health information exchange, known as Chesapeake Regional Information System for our Patients (CRISP), and the hospital's EMR. It provides information from the prescription drug monitoring program and incorporates investigative work with the patient's other healthcare providers. Physicians can review a more complete summary of ongoing issues, standardize the approach to care, and proactively address underlying psychosocial reasons for frequent use.

Comprehensive Care Clinic. The comprehensive care clinic targets patients without a primary care provider, without insurance, or with high-risk follow-up that may cause patients. ED physicians refer patients to the clinic for a visit or consultation. The clinic has a wide range of services to offer patients including case managers and nurse practitioners to develop plans to assist patients with finding a primary care physician, consultations, and psychosocial support. The comprehensive care center is not only a referral center for patients after they have been evaluated, but proactively seeks out patients. The center identifies patients that were at high risk for admission or readmission via a modified LACEⁱ score. Utilizing this modified scoring tool, an electronic notification system was developed so that case managers would be able to identify patients that have entered into the ED. They may then have the opportunity to help these patients with the coordination of their care real-time in the ED.

Standardized Care Pathways. There is considerable variation in the way that many ED physicians approach clinic care, particularly when it comes to hospital admission. To address this variation, a low-risk chest pain protocol was created to safely reduce hospital admissions. Starting in October 2014, eligible patients were shunting to outpatient exercise treadmill stress tests instead of an observation or inpatient stay. Patients with a modified TIMIⁱⁱ score of 0 (removing the aspirin requirement, who are under 65 years, have two or fewer risk factors for coronary artery disease, a normal EKG, and negative troponin tests at zero and three hours) are scheduled for an outpatient stress test within 24 to 72 hours. There have been over 194 patients that have entered into the low risk chest pain protocol instead of having an observation stay or admission at UCH and over 56 patients at Harford Memorial Hospital (HMH), part of the Upper Chesapeake Health System.

III. Physician Payment and Information System Reforms

Payment. The *Patient Call-back Program* aims to move beyond the episodic treatment performed in the ED to improve follow-up and care coordination, to ensure that the longitudinal care needs are met, with the goals of ensuring seamless transitions in care. While ED physicians at UM UCH do not directly benefit financially for improved patient care or reduced costs, Maryland Emergency Medicine Network (MEMN)ⁱⁱⁱ has added payments to physicians to provide call-backs to their discharged patients (up to two per shift) to assist with follow-up and identify any barriers to improve risk management and patient safety. The program is targeted to any patient seen in the ED and discharged by the provider. In addition to physician calls, an administrative assistant calls discharged patients prioritizing those who had chest or abdominal pain over 65 years of age.

ⁱ The LACE assessment is a common tool that calculates a readmission risk score based on length of stay, acute admission through the emergency department (ED), comorbidities, and emergency department visits in the past six months.

ⁱⁱ A TIMI risk score assesses the risk of death and ischemic events to help providers in therapeutic decision making. The name comes from the Thrombolysis In Myocardial Infarction, an academic research organization out of Brigham & Women's Hospital and affiliated with Harvard Medical School.

ⁱⁱⁱ The MEMN contracts with hospitals to provide emergency medicine services.

Information Systems. Several interventions have been implemented to facilitate care through information technology:

- *High-Risk Care Plans and Call-backs integrated into the EHR.* The one-page care plans are easily accessible in the EHR, providing a useful, time-saving tool to physicians for high-cost patients. In addition, an EHR-based database is used to measure responses and provide assistance with further follow-up.
- *Statewide Health Information Exchange and Prescription Drug Monitoring Program.* UM UCH participates in Chesapeake Regional Information System for our Patients (CRISP), a statewide information system in Maryland and the District of Columbia that provides easy access to information on prior visits and test results. ED physicians can query CRISP to obtain old records, such as ED visits, hospitalizations, and imaging test results. This facilitates coordinated care through reducing duplicative care (such as repeating a CT scan or laboratory testing for patient who just received the same test), and provides insight into prior prescriptions and care.

IV. Costs of Implementation and Results

Changing care processes and expanding information systems requires start-up and ongoing investments. The *High-Risk Care Plan Program* required staff time to develop the program. Dr. Fermin Barreuto estimates that he allocates 10-15% of his time to this program that includes planning implementation, quality assurance, research, approval processes, and maintenance of the program. Early on, the program was initiated with a re-prioritization of goals for existing staff positions and no additional hiring; however, as the program has expanded UM UCH is in the process of hiring one full-time case manager to assist with the program. Implementing the EHR component of the program required a single payment of \$20,000. So far, the program includes 844 patients. Of these, over 50% have shown a decrease in opioid prescriptions and beneficial effects sustained to over 400 patients with 40-50% reduction in admissions, observation stays, and ED visits. There has been a 39% decrease in ED visits, 58% decrease in inpatient hospital stays and a 47% decrease in observation stays when the high risk care plans expanded to over 300 patients from the initial 44 patient pilot.³

For the *Low-Risk Chest Pain Protocol*, staff time was required. Length of stay in the ED has increased for patients fitting the protocol since the troponins are performed at zero and three hours. Physicians were monitored for variance regarding admissions patterns on chest pain patients.

For the *Patient Call-Back Program*, physicians are compensated \$20 per call up to 30 calls per month. So far, physician participation in the program is around 70%, with a 15-30% penetration rate for discharged patients. Since the inception of the patient callback program, the system has surpassed the patient satisfaction goals for 3 months straight in 2015.

The *Comprehensive Care Clinic* was the most expensive component of the care redesign because it involved the development of an entirely new clinic. The infrastructure costs to accomplish this were over one million dollars. Since this clinic just opened in January 2015, no results are available.

V. Challenges, Policy Solutions, and Next Steps

While UM UCH has implemented several positive changes designed to improve acute care value, several challenges were encountered along the way:

- In the *High-Risk Care Plan Program*, there was initial difficulty in including patients in the process of developing the care plans. UM UCH is working to improve transparency so that patients are aware of the care plan by sending the plans to every patient. This will give patients the opportunity to provide feedback and will help to set patient expectations.
- In the *Low-Risk Chest Pain Protocol*, although supported by evidence, this protocol by design will have a low but nonzero miss rate (approximately 1.5%) for acute coronary syndrome. As care standards change to promote cost-conscious care, ED physicians may be required to bear increased risk and liability associated with programs that promote discharging patients who would decrease admissions. This may cause ongoing pushback from ED physicians. However, such steps may be offset by an increased ability to obtain follow-up care that was previously unavailable, and by additional ways to assure that patients are receiving appropriate care.
- In the rollout of the *Patient Callback Program*, there was pushback from providers who worked overnight shifts because they did not want to return to the hospital after their shift to complete the calls and were not able to easily participate in the program. UM UCH has recommended skype accounts and a block call function so physicians can call patients from their home.
- Finally, the *Comprehensive Care Clinic* was expensive to build (approximately \$1 million) and has high overhead, and direct billing to patients is minimal (solely provider fees). This is based on the expectation that these costs will be recouped by reducing admissions and repeat ED use. Because the clinic just opened, the return on investment is not clear.

Gain sharing for physicians may be able to assist in ongoing funding of the programs. A shared savings type arrangement would help reinvest funds to help finance the additional capacities and capabilities, such as the comprehensive care clinic and other population health management services. The shift to the fixed hospital budget necessitated care redesign and physician payment adjustments. The UM UCH system is also working on gathering data to prove effectiveness of all of the programs. Additional data and expanded pilot testing of programs that shift payment away from fee-for-service in acute care will help hospitals and providers tailor their interventions and programs to the needs of their communities.

Next steps for UM UCH include the development of additional programs and services (such as a telehealth pilot), however, this will require a dedicated revenue stream to be able to offer service. A LifeBot Telemedicine pilot funded by a \$30,000 grant from the Maryland Health Care Commission to conduct remote telehealth assessments of Lorien Health System's Bel Air senior community patients. The goal of this partnership will be to improve the patient's quality of life by reducing avoidable acute care transfers, admissions, and re-admissions.⁴

ENDNOTES

1. Pines JM, Farmer SA, Pimentel L. The Maryland Medicare waiver and emergency care: mixed experiences deserve close scrutiny. *American journal of medical quality : the official journal of the American College of Medical Quality*. 2015;30(2):186-187.
2. Pines JM, Newman D, Pilgrim R, Schuur JD. Strategies For Integrating Cost-Consciousness Into Acute Care Should Focus On Rewarding High-Value Care. *Health Affairs*. 2013;32(12):2157-2165.
3. Ablaihed L, Barrueto F, Jr., Pimentel L, Comer A, Browne BJ, Hirshon JM. 8 High Risk Care Plans Effectively Decrease Emergency Department Resource Utilization. *Annals of Emergency Medicine*.64(4):S4.
4. University of Maryland Upper Chesapeake Health and Lorien Health Systems Awarded Telehealth Grant for Deployment of LifeBot Systems. 2014; <http://www.lifebot.us/news/university-maryland-upper-chesapeake-health-lorien-health-systems-awarded-telehealth-grant-deployment-lifebot-systems/>.