A Community Hospital–County Health Department Partnership to Reduce Preventable Readmissions: Lessons Learned for Population Health Management

Jordan H. Kurtzman, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland

EXECUTIVE SUMMARY
Healthcare reform has prompted hospital executives to adopt new strategies aimed at population health management. Research regarding the broad determinants of health suggests that if hospitals are to build successful population health management models, they must engage in collaborative partnerships with a variety of community stakeholders. In this report, the author describes a collaborative partnership between a community hospital and a county health department to reduce preventable readmissions. This program illustrates the important role that health information technology (HIT), managerial systems, new processes, and hospital culture play in collaborations with external parties. On a larger scale, these facilitators are key factors in developing population health business models such as accountable care organizations. A sound hospital infrastructure should be supported by hospital leaders and staff who are held accountable for community initiatives and communicate transparently with external partners.

For more information about the concepts in this essay, contact Mr. Kurtzman at jkurtzm1@jhmi.edu. Mr. Kurtzman is the first-place winner of the graduate division of the 2015 ACHE Richard J. Stull Student Essay Competition in Healthcare Management. For more information about this competition, contact Sheila T. Brown at (312) 424-9316.
INTRODUCTION
Hospitals have little experience in population health management (Devore & Champion, 2011). For the past several decades, hospitals have focused on providing episodic care, coordinating care within the walls of their institutions. While collaboration among hospitals and external parties such as government agencies, schools, businesses, religious institutions, and community organizations exists, changes in the healthcare delivery system call for stronger cooperation among these stakeholders to effectively manage the health of the population (Bailey, 2010; Hacker & Walker, 2013; Kindig & Isham, 2014).

Healthcare reform initiated by the Affordable Care Act (ACA) has prompted hospitals to rethink their business strategy from one of volume to one of value, and has created a surge in population health initiatives (Berwick, Nolan, & Whittington, 2008; Muhlestein, 2014). With fewer hospital resources and the realization that health is determined by a variety of physical, social, and environmental factors, the success of hospitals, including their financial well-being, will be greatly influenced by their ability to engage in collaborative partnerships (Hacker & Walker, 2013; Kindig & Isham, 2014; University of Wisconsin Population Health Institute, 2014).

In the state of Maryland, hospitals are under increased pressure to manage the health of their patient population under the Centers for Medicare & Medicaid Innovation All-Payer Model Demonstration Contract (Rajkumar et al., 2014). As part of the demonstration project, which began January 1, 2014, the state developed an incentive program that requires Maryland hospitals to reduce their annual readmission rate, with the aim of reducing the state’s overall readmission rate to the national Medicare readmission rate or lower by 2018 (Health Services Cost Review Commission, 2014).

In this report, I examine a recent collaborative effort in Maryland between Howard County General Hospital (HCGH) in Columbia and the Howard County Health Department (HCHD) designed to reduce preventable readmissions among high utilizers of hospital care. I describe lessons learned as the hospital project manager. In addition, I share findings from this project to explore broader implications for hospital executives and other leaders who desire to build population health business models by partnering with external groups in their communities.

BACKGROUND
HCGH is a 253-bed community hospital that is part of Johns Hopkins Medicine. As the only hospital in the county, it is viewed by residents as the county’s primary provider of healthcare services. HCGH’s unique market position enables hospital leaders to develop strong relationships with community organizations and physicians.

In January 2014, the hospital was approached by the HCHD to launch the community care team (CCT) program. Health department leaders conceptualized the program as a means to reach its goal of reducing preventable hospital readmissions among county residents. The CCT is composed of two registered
nurses and four community health workers, and it is overseen by an HCHD project management team and the county’s health officer.

The program targets high utilizers of hospital services—those individuals who have had two or more hospital admissions within the preceding 6 months and who have two or more chronic conditions. The program offers a variety of services for participants, including in-home medication management and chronic disease education, and it serves as a way to connect individuals to primary care providers, specialists, transportation services, and community resources. On average, the CCT intervention lasts 90 days, and, on its conclusion, care for the individual is transitioned to the primary care provider.

The goals of the CCT program are in nearly perfect alignment with hospital initiatives to improve care transitions and reduce preventable hospital readmissions; thus, HCGH was eager to participate. The hospital refers patients who meet program eligibility criteria to the CCT. On receiving a patient referral, a member of the CCT visits the patient during the hospital stay, and if the patient desires, the CCT enrolls him or her in the program.

While there was initial support for the program, the CCT received fewer referrals from the hospital than expected. A 6-month performance report showed that, on average, the CCT received nine referrals per month. Only half of the patients who were referred elected to enroll in the program. Communication between the health department and the hospital was poor and was compromised further by changes in the hospital’s executive leadership team.

**PROJECT TRANSITION**

In July 2014, HCGH leaders met with the CCT to discuss the state of the program. HCGH leaders believed that the program was an important initiative and were surprised by the program’s lack of success. Although a number of items were proposed to increase referrals, many of these suggestions were never implemented. Hospital leaders realized that a dedicated hospital-based project manager was needed to better understand why the current referral process was failing and to develop an improved process to increase referrals. Thus, the hospital appointed me to serve as project manager to work with a hospital senior project coordinator, who was familiar with the hospital’s infrastructure, hospital staff members, and the CCT to accomplish these goals.

We reviewed the program with members of the CCT and hospital staff members engaged with the program. We used Lean methodologies to map the referral process and identify barriers to success. Initial findings revealed little hospital infrastructure to support the program. A great deal of confusion existed regarding who was responsible for the project, how referrals were to be made, and whether the team was actually receiving referrals.

We learned that HCGH case managers were responsible for referring patients to the CCT program. The hospital’s director of case management was supportive of the program but stated that case managers had no easy way to assess whether a patient was
eligible for the program because of the manner in which the patient’s record is visible in the hospital’s electronic health record (EHR). Case managers had no automated report to identify program candidates; thus, they only referred patients to the program on the basis of their own experience with patients, recognizing those who were frequently admitted to the hospital.

Conversations with members of the CCT also revealed that the team had significant data collection limitations as a result of inadequate HIT. The CCT had no reporting mechanism to monitor whether patients enrolled in the program were readmitted to the hospital or visited the emergency department. The CCT relied on self-reported data from postintervention surveys to evaluate the effectiveness of the program.

To establish an automated mechanism to identify eligible patients and track health outcomes of enrolled patients, the CCT program worked with Chesapeake Regional Information System for our Patients (CRISP), Maryland’s health information exchange (HIE). The CCT and the hospital envisioned that CRISP would enable hospital case managers to receive a daily report of patients readmitted to HCGH who met program eligibility criteria. Unlike the hospital’s EHR, CRISP offered the potential to identify patients admitted to HCGH with a previous hospital admission at any Maryland hospital, thus expanding the program’s pool of potentially eligible patients.

During the project transition, we had multiple conversations with our legal department to better understand the project’s legal agreements. The existing referral process required obtaining two signed patient consent forms, which created an awkward workflow for both case managers and CCT staff members. Case managers obtained the first consent, which allowed a member of the CCT to visit a patient in the hospital who had expressed interest in enrolling in the program. The second form provided consent to enroll the patient in the program and permitted CCT staff members to review his or her medical information. This allowed staff members to effectively evaluate the patient’s condition and, on hospital discharge, coordinate his or her care. Despite having obtained this consent, the CCT had no means of accessing the hospital’s EHR, the primary source of patient data. The CCT relied on information provided by case managers or reported by patients, which often resulted in an incomplete clinical picture of the patient, compromising the effectiveness of the CCT intervention.

Lastly, we learned that CCT members were processed through the hospital’s volunteer office. Although they had completed the necessary training and orientation and passed background checks and licensure verification, we realized there was no existing human resources process to acclimate community partners to the hospital.

**PROCESS REDESIGN**

Our first priority was to establish a sound HIT infrastructure to identify and refer eligible patients and subsequently monitor outcomes of enrolled patients. We continued conversations with leaders of CRISP to better understand how the state’s health information
exchange could serve our project needs.

After engaging an HCGH HIT project manager, we piloted a CRISP daily notification report that identified patients readmitted to the hospital within the past 30 days. Despite establishing the necessary HIT interface, the reports generated had significant limitations. Because of the existing structure in which data were transmitted from hospitals to CRISP, reports were unable to filter readmissions based on clinical diagnoses. Obstetrics patients who had complicated pregnancies made up a majority of readmissions, and these patients were ineligible for the program.

After sharing our results with CRISP leaders, we realized that CRISP could best be used to track healthcare encounters of patients already enrolled in the program by using its Encounter Notification System. A memorandum of understanding between the hospital and the CCT enabled the team to receive real-time notifications when patients enrolled in the CCT program visited any emergency department or were admitted to any hospital in Maryland.

Although CRISP offered a solution to track enrolled patients' hospital-related encounters, the project still required an automated mechanism to identify patients who were eligible for the program. To accomplish this, we used the hospital’s internal EHR. While no report was available that effectively identified eligible patients on the basis of the program’s criteria, we generated a semifiltered report daily of hospital admissions within the previous 24 hours. When exported, this report referenced a database of previous hospital admissions that enabled us to determine if the patient had been admitted within the preceding 6 months and was a Howard County resident. I e-mailed the report of candidates daily to case managers, who reviewed the patients' medical records to determine if they met the initial medical screening criteria before being referred to the CCT.

Working with our health system’s legal team, we streamlined the program’s consent process. Our relationship with the health department and a new consent form allowed CCT staff members to access the medical record of patients who were interested in participating in the program. The manner in which the hospital’s EHR is constructed, however, provides users with access to all medical records of HCGH and health system patients. Thus, providing CCT staff, an external party working for the health department, with access to the hospital’s EHR was problematic. We created a process whereby CCT staff could view the patient’s medical record—after receiving consent—in our Department of Health Information Management (HIM). This process was not ideal, as access was not in “real time” and it created additional work for HIM staff. After investigating alternatives, the health system’s legal department and HCGH’s director of clinical informatics determined it was appropriate for the CCT to be given access to an EHR application typically provided to community physicians. The application allows physicians and their staff members to access the hospital’s EHR for their patients only, in real time and online, by inputting key patient identifiers.
RESULTS
Implementing the new referral process was a time-consuming task that often resulted in frustration for both HCGH and CCT staff who were actively involved in the program. However, once the existing referral process was modified in September 2014, the number of referrals to the program increased and, to date, averages approximately 35 per month.

Increased communication between the CCT project management team and the hospital continues to ensure the project’s success. Weekly phone calls and e-mail updates between the hospital and the CCT project management team help to resolve program issues, and enrollment data from the previous week are shared. CCT staff gave a presentation at a hospital nursing leadership meeting to gain further support for the program from nurse managers who often saw CCT nurses on their units.

Although the new referral process has resulted in a greater number of referrals and subsequent enrollees, the CCT is not operating at full capacity. We are performing a retrospective analysis to characterize hospital readmissions and determine the total number and types of patients who are readmitted to the hospital. We will share the results of this analysis with the CCT to determine whether the existing eligibility criteria need to be modified to better serve the needs of Howard County residents.

Most importantly, HCGH’s commitment to the CCT program has helped to reestablish trust between the hospital and the health department. HCGH executive leaders have taken a more active role in health department initiatives, reassuring community leaders that the hospital seeks to collaborate with external parties to define and improve community health interventions.

DISCUSSION
If hospitals desire to build community-based population health business models, collaboration among hospital leaders and a variety of external organizations will be required (Bailey, 2010; Hacker & Walker, 2013; Kindig & Isham, 2014). While the CCT program is a relatively small project between a community hospital and a county health department, the above project description provides meaningful information regarding how hospital leaders can better prepare for the future of population health management.

The primary population health management business model introduced by the ACA is the accountable care organization (ACO) (Fisher, Shortell, Kreindler, Van Citters, & Larson, 2012). The work of Burns and Pauly (2012) provides an effective framework to extrapolate lessons learned from the CCT program to the ACO business model. Burns and Pauly (2012) draw on the ACO Learning Toolkit (Brookings Institution, 2011) and summarize into four major resource categories the infrastructure features and capabilities required for successful ACOs: concrete assets, managerial and financial systems, new organizational processes, and cultural changes. In the sections below, I describe each major domain and offer recommendations for hospital executives based on our experience with the CCT program.
Concrete Assets
The CCT program demonstrates the pivotal role HIT can play in population health management. The ability of EHRs to provide both limited and real-time access for external parties working on behalf of the hospital has become increasingly important in the population health management environment (Fisher et al., 2012; Foldy, Grannis, Ross, & Smith, 2014). To my knowledge, use of the hospital’s EHR’s web-based application by CCT nurses is the first time this application has been used by a community partner for care coordination. As hospitals begin to partner with community organizations, it is important for hospital executives to recognize that these organizations have basic HIT and likely will rely on hospitals for medical information to coordinate healthcare services (Foldy et al., 2014). To determine how hospitals should provide partnering community agencies with appropriate EHR access, hospital executives need to engage the hospital’s legal, IT, and HIM departments, as well as community leaders, to develop a feasible plan.

The use of our state’s HIE illustrates the importance of investing in and designing an HIE that provides value to key stakeholders in the healthcare environment (Fisher et al., 2012; Larson et al., 2012). The CCT program was the first at the hospital that sought to use CRISP for care coordination efforts. While our pilot using CRISP readmission reports showed these reports to be of little value to the hospital, HCGH and CCT staff provided valuable feedback to HIE personnel and gained a better understanding of the current capabilities of CRISP. As HIEs evolve, hospital leaders should appoint a member of the hospital’s staff to work with exchange personnel to shape HIE strategy.

Managerial and Financial Systems
Population health business models require sophisticated managerial and financial systems to budget, plan, disburse financial rewards, and monitor operational performance (Burns & Pauly, 2012). The CCT program illustrates the need for hospitals and community partners to ensure that they have adequate systems to obtain real-time data and to measure the effectiveness of their programs. Our experience taught us that many assumptions were made about the hospital’s internal systems that jeopardized the success of the program. Although we adapted EHR reports to identify eligible patients, these reports were by no means perfect and required review by the hospital’s case management staff to confirm that patients were medically eligible for the program.

If hospitals are to become key players in population health management, significant resources, both financial and operational, are needed to analyze real-time data (Burns & Pauly, 2012; Fisher et al., 2012; Larson et al., 2012). Moreover, hospitals need to communicate openly with external parties about the capabilities and limitations of their systems. To accomplish this, hospitals should create multidisciplinary teams composed of IT, HIT, and clinical informaticists staff members who are most familiar with these systems when designing community projects.
Even with the improvements made to the referral process, the CCT is receiving fewer referrals than expected, resulting in the need for the hospital to analyze its patient readmission patterns. As the owners of EHRs with expansive reporting capabilities, hospitals will be relied on as data warehouses that can help communities identify emerging health trends and shape community-based interventions (Foldy et al., 2014). Moreover, sharing hospital data and linking them to other data sources, such as local and state surveys, can provide valuable insight to better understand the needs of the population (Bruckner & Barr, 2014; Gross, Brenner, Truchil, Post, & Riley, 2013; Perry & Stephenson, 2013).

New Organizational Processes
Population health management requires hospitals to create new processes to better coordinate patient care across multiple healthcare settings (Burns & Pauly, 2012; Larson et al., 2012). Under the traditional ACO framework, hospitals must work to align providers and payers with the hospital, both operationally and financially (Devore & Champion, 2011; Fisher et al., 2012; Salmon et al., 2012). In our partnership, the CCT was funded by the health department and a local nonprofit philanthropic organization, providing care to county residents who had been admitted previously to HCGH. Despite the program’s clear value proposition to the hospital, the CCT faced great difficulty integrating its services with those of the hospital.

As the number of partnerships between hospitals and community organizations grows, human resource leaders should develop a means to orient community partners to the hospital (Dussault & Dubois, 2003). They must define responsibilities and expectations for both clinical and nonclinical staff who work in alignment with the hospital (Dussault & Dubois, 2003). Without effective human resource processes to support community partnerships, hospitals jeopardize their ability to pursue future community projects and risk damaging their overall reputation in the community.

Cultural Changes
Hospital executives who desire to build community-based population health business models must be willing to foster a hospital culture in which collaboration with external partners is embraced (Burns & Pauly, 2012; Shulkin, 2012). While HCGH leaders were eager to partner with the health department, staff members viewed the program as an additional task and didn’t fully understand why the health department needed information regarding the hospital’s patients.

Healthcare executives, department directors, and other hospital leaders must convey to frontline staff the important role they play in managing the health of the population (Berry & Beckham, 2014). In the case of readmissions, physicians, nurses, case managers, and other staff must realize that the care provided in the hospital has a direct impact on the health outcomes of patients as they return to the community. Hospital staff members must be willing to work as a team and understand how external parties can provide value to the hospital given its
limited resources and the broad social determinants of health (Berry & Beckham, 2014).

Finally, our experience with the CCT program taught us that collaboration sometimes can result in poor communication and undefined project roles. Collaborative projects, whether small or large, should clearly identify process owners and involve leaders who are held accountable for project outcomes (Isham, Zimmerman, Kindig, & Hornseth, 2013).

**CONCLUSION**

Approximately 80 percent of health outcomes are determined by factors other than clinical care (University of Wisconsin Population Health Institute, 2014). If hospital executives seek to build robust population health business models, they must be willing to collaborate with a variety of external partners, including local health departments, schools, businesses, and faith-based and community-based organizations.

Isham et al. (2013) ask healthcare and community leaders the following questions: Will busy healthcare organizations, already overwhelmed with the demands of a rapidly evolving healthcare sector be willing to formally add daunting community health issues to their agendas? Will schools, foundations, nonprofits, government agencies, and others be willing to look beyond their narrow core missions? Although the answers to these questions ultimately will determine the success of population health management, we hope the story of the CCT partnership shows that through transparent communication, leadership accountability, and sound infrastructures and processes, a collaborative environment can be established to promote the health of the community.

**ACKNOWLEDGMENT**

The author thanks the Howard County Health Department, Healthy Howard, The Horizon Foundation, and Howard County General Hospital staff for their teamwork and collaboration.

**REFERENCES**


