Use of Health Information to Improve Care:
The Southern Piedmont Beacon Community Grant

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In 2009, the Office of the National Coordinator for Health Information Technology solicited proposals to participate in the Beacon Community Program. The program is designed to support communities with established reputations for adopting health information technology solutions. This commentary reviews Community Care of Southern Piedmont, a Beacon Community Program in North Carolina.

The nation is rapidly moving toward health information technology (IT) as the foundation for improving the health of its citizens. A major initiative of the Office of the National Coordinator for Health Information Technology (ONC) of the US Department of Health and Human Services is to improve this foundation. The ONC established the Beacon Community Program to guide the way to a transformed health care system by supporting efforts to make breakthrough advancements in health care quality, safety, and efficiency, as well as in public health at the community level, and to demonstrate that these gains are sustainable.

The Beacon Community Program seeks to accelerate the adoption of electronic health records (EHRs) and health information exchanges (HIEs) while supporting the "meaningful use" of EHRs and the innovative use of powerful health IT solutions. In May 2010, the Beacon Community Program initially awarded $220 million in funding to support 15 communities, which were expected to have rates of EHR adoption significantly higher than published national estimates. (Two additional grants, totaling $30 million, were awarded in September 2010.) The project period of each cooperative agreement awarded is 36 months.

Community Care of Southern Piedmont (CCSP)

CCSP's proposal. CCSP, located in the south-central North Carolina counties of Cabarrus, Rowan, and Stanly, responded to the ONC's request for Beacon proposals by organizing a contingent of health care providers to participate in the development and submission of a proposal to the ONC. CCSP offers a locally based, private-sector approach to improve health care and contain costs and is an integral component of Community Care of North Carolina (CCNC), an innovative statewide partnership dedicated to improving quality and expanding access to care. CCSP is an independent, nonprofit organization that combines the expertise of primary care physicians, specialists, pharmacists, and other health care professionals to create "medical homes" for Medicaid beneficiaries in Cabarrus, Rowan, and Stanly counties. CCSP is 1 of 14 local networks that compose CCNC.

The core Beacon work group assembled by CCSP included the 3 counties' public health departments; Carolinas Medical Center NorthEast, Rowan Regional Medical Center, and Stanly Regional Medical Center; and, from outside the 3 counties, participants from Duke University Health System, the University of North Carolina (UNC)–Chapel Hill Gillings School of Global Public Health, and the North Carolina Department of Health and Human Services. The point of view taken in the development of the CCSP's proposal was that, to be optimally useful, a Beacon Community Program must be integrated within a broad, statewide program to implement and sustain successful health IT uses beyond the CCSP. The CCSP Beacon project was designed to support a complete process of learning and diffusion of health IT use that repeats the following steps: (1) gather and prioritize candidate models of health IT use; (2) test and validate the models, with involvement from professional providers, patients, lay providers, public health departments, medical researchers, payers, and other stakeholders; (3) deliver high-quality evaluations, supportive intellectual property, and enduring materials in a way that supports sustained replication of successful models and avoidance or refinement of unsuccessful models; and (4) quickly employ the deliverables mentioned above in a broad, statewide diffusion program that leverages the missions of health-centric North Carolina public and private institutions.

Data gathered during the development process for the Beacon grant indicated that Cabarrus and Stanly counties had impressive EHR penetration levels of greater than 80%. The data for Rowan County were not immediately available, so the assumption was that EHR penetration there was close to nil. On the basis of 2008 data, the overall EHR penetration

Electronically published July 25, 2011.

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N C Med J. 2011;72(3):234-236.
0029-2559/2011/72317

level for the CCSP was probably greater than 60% [1].

Initially, the ONC suggested that each Beacon project should focus on implementing and validating a new generation of health priorities identified by recent community health assessments—notably, hypertension, diabetes, congestive heart failure (CHF), ischemic vascular disease/postmyocardial infarction, and asthma—and to improve preventive care. Related cost-efficiency goals focus on reducing the number of preventable hospital readmissions, duplicate imaging tests, and unnecessary emergency department visits. While the specifics of each goal vary, the overall improvement theme is to electronically collect, share, and use the right data in a timely way across the community of providers, patients, and public health entities. The CCSP Beacon project expanded this theme into the community, which already had a high rate of EHR penetration (greater than 60%), to include free clinics, community clinics (including federally qualified health centers), small medical practices, public health departments, school nurses, and parish nurses. This strategy will be implemented in partnership with North Carolina's Regional Extension Center program for "priority providers" and with direct project funding to those who are not incentivized by the meaningful use of an EHR incentive program. The project also seeks to involve patients and consumers and their lay caregivers in seeking these health improvements and cost-efficiencies in multimodal ways. Health IT–supported program elements are planned, to give patients timely electronic access to their health information, tools to make use of this information, and tools to provide new information in cooperation with their care providers. Sharing the right data in a timely way depends critically on having a general electronic HIE mechanism that connects providers, patients, and public health departments. This resulting community HIE will leverage the North Carolina Health Information Exchange services under development and will implement community HIE services where needed.

During the past several months, the project team at CCSP Beacon Community has been laying the groundwork for clinical interventions that will impact hospital readmissions, emergency department visits, and care for diabetes, CHF, and pediatric asthma. This groundwork includes understanding and defining the necessary data requirements for both measurement and proactive health IT interventions. The Beacon requirements for data will increase over time, as interventions and population sets broaden. As such, the project is separated into 4 phases. This project is intended to define, at a high level, the requirements for data and/or a more formal HIE within each of the 4 phases.

During phase 1, CCSP is focused on transitional care and interventions to decrease unnecessary emergency department visits. Data needed for these interventions are limited to hospital data. Currently underway is an admission/discharge/transfer Medicaid feed from the 3 hospitals involved in the Beacon project. This will allow CCSP to alert care managers to an admission or discharge event and will enhance patient-centered medical home (PCMH) follow-up along the care continuum, with a specific focus on the transitional period between acute care stay and discharge back to ambulatory care.

During phase 2, CCSP will focus on PCMH panel management and use ambulatory practice–embedded and office-based care managers. To facilitate success for the PCMH team, these care managers will need access to robust data on patients. Of significance to the Beacon project are the 15 objectives and associated measures, described below, that CCSP is committed to achieve. Currently, the CCSP care managers are limited to claims data, which are not real-time and lack clinical elements that are necessary for chronic disease (ie, diabetes, CHF, and asthma) management and public health interventions. During phase 2, CCSP will also add a complete set of hospital data, which will include a discharge summary, problem list, medication list, and laboratory results. These data will be required for the PCMH team to aid in care coordination, medication reconciliation, and medication adherence.

During phase 3, CCSP will continue to refine the interventions from phase 1 and phase 2, as well as add public health interventions. The 3 public health departments in the participating counties will benefit from viewing available patient data and will contribute to the larger patient health record. In addition, patient data will be deidentified and used for syndromic surveillance and for coordinating larger public health interventions that support the entire population. One feature of the HIE that CCSP will be leveraging is the ability to trigger alerts to public health officials when laboratory results positive for specific conditions are indicated.

During phase 4, CCSP will be refining its processes and will begin to focus on translating its data into knowledge, to effectively demonstrate the project's outcomes and share best practices.

CCSP's Beacon Community Program objectives. Of significance to the Beacon project are the 15 objectives and associated measures that CCSP is committed to improve. Applicable meaningful-use language and detailed definitions for each objective have been developed and can be obtained from the CCSP on request. Broad descriptions of these objectives follow.

Three objectives address hospital admissions and emergency department visits: (1) by June 2011, reduce preventable readmissions, as a percentage of total admissions, among patients enrolled in Medicaid but ineligible for Medicare to 9.4% and maintain that range through the first quarter of 2013; (2) by the third quarter of 2012, decrease nonemergent visits to the emergency department among patients enrolled in Medicaid by 10%; and (3) by the fourth quarter of 2012, decrease the number of asthma-related visits to emergency departments among patients aged 5-17

years to 7.3 visits per 1,000 all-cause visits.

Diabetic patients are associated with 5 objectives: by the fourth quarter of 2011, (1) ensure that 15% or fewer patients have a hemoglobin A_{1c} level of greater than 9%, (2) ensure that 80% of patients aged 18 years and older with hypertension have evidence of filling an angiotensin converting enzyme inhibitor or angiotensin receptor blocker prescription during the previous year, and (3) achieve a relative increase of 10% in the number of patients aged 60 years and older who have received pneumococcal vaccine; (4) by the first quarter of 2012, achieve a relative increase of 10% in the number of patients aged 50 years and older who have received seasonal influenza vaccine; and (5) by the fourth quarter of 2012, ensure that 80% of patients have undergone an annual retinal examination.

Six objectives focus on CHF patients: ensure that (1) 80% of patients aged 18-85 years have a blood pressure of less than 140/90 mm Hg, (2) 90% of patients aged 18 years and older have had a left ventricular function assessment, (3) 80% of patients have evidence of filling an angiotensin converting enzyme inhibitor prescription during the previous year, and (4) 80% of patients with an ejection fraction of less than 40% have evidence of filling a beta blocker prescription during the previous year; (5) by the fourth quarter of 2011, achieve a relative increase of 10% in the number of patients aged 60 years and older who have received pneumococcal vaccine; and (6) by the first quarter of 2012, achieve a relative increase of 10% in the number of patients aged 50 years and older who have received seasonal influenza vaccine.

Conclusion

The CCSP Beacon project has completed its first year. With nearly 2 years left to achieve these 15 significant health improvements, the project is rapidly shifting into the implementation phases (ie, phases 2 and 3) outlined in the project description. Most contractual issues have been settled, baseline measures are in place, telehealth proposals have been solicited, and physician engagement has commenced. Year 2 will demonstrate that powerful health IT solutions can reduce unnecessary hospital use, improve diabetes management, and decrease rates of premature deaths caused by CHF.

The Beacon project has afforded CCSP the unique opportunity to apply technological innovation to longstanding problems associated with population health. The relative success of this and other Beacon projects around the country will become the capstone for determining new ways of coordinating care, improving patient health, and reducing health care costs. NCMJ

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Acknowledgment

Potential conflicts of interest. W.F.P. has no relevant conflicts of interest.

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