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Diabetes Care in Public Hospitals: Effective Interventions

Chronic disease has become the most prevalent and costly of all health problems in the nation today, accounting for 70 percent of all deaths in the United States annually.[1] Medical care costs for chronic disease sufferers, which comprise more than 75 percent of the nation's $2 trillion medical expenditures, are a major contributor to the soaring rise in health care costs in recent years.[2, 3] According to the latest estimates, 133 million people (almost 44 percent of the U.S. population) currently have at least one chronic disease.[4] Preventing and improving care for chronic diseases are critical to sustaining the well-being of both the nation and the health care system.

The burden of chronic disease care is especially significant for safety-net hospitals and their patients. To highlight promising chronic disease practices implemented by public hospitals, the National Association of Public Hospitals and Health Systems (NAPH) is launching a three-part series of Research Briefs to examine, respectively, the treatment of diabetes, asthma, and other chronic illnesses. The series updates previously published works by NAPH and its research affiliate, the National Public Health and Hospital Institute (NPHHI), on chronic care treatment efforts in public hospitals.[5]

This Research Brief provides information on the prevalence of diabetes, summarizes common approaches to its management by NAPH members, and offers descriptions of specific interventions that are proving successful at caring for public hospital diabetes patients.

Diabetes Overview

Diabetes afflicts approximately 24 million Americans (or roughly eight percent of the U.S. population), a figure that has more than doubled from 15 years ago.[6, 7] Public hospitals and health systems provide care for a disproportionate share of populations that have a high incidence of the disease, including uninsured, low-income, racial and ethnic minority, and poorly-educated patients.[8, 9, 10]

Because patients play a key role in managing this illness, providers who care for them require a unique set of educational and motivational skills. Clear communication between patients and clinicians is an essential element to proper diabetes care. Research indicates that vulnerable patient populations often face greater barriers to self-management than their more affluent counterparts. For example, some may experience communication barriers with their providers, inadequate access to diabetes resources (e.g., web-based tools) and affordable healthy foods, and a lack of safe neighborhood recreational facilities.[11] Consequently, public hospitals and health systems also face challenges in caring for their patients, many of whom may have limited English proficiency and difficulty understanding complicated instructions, or do not have insurance to pay for needed medical supplies crucial to their treatment plan.

In early 2008, NAPH surveyed its membership to examine chronic care efforts in public hospitals, and identified several interventions that have dramatically improved outcomes for diabetic patients. The study found common themes among these successful programs, including a focus on:

- Improving patient-provider communication, which helped enhance patients' self-management skills;
- Developing culturally-appropriate approaches to caring for diabetic patients;
- Increasing access to preventive services, such as eye and foot checkups;
- Expanding screening for co-morbid conditions like depression;
- Implementing disease registries to assist providers in tracking outcomes and managing care for all patients in their system; and
- Providing education and outreach to community members.

Examples of Successful Diabetes Interventions in Naph Hospitals

CALIFORNIA PUBLIC HOSPITAL SYSTEMS

Spreading Effective & Efficient Diabetes Care in California's Public Hospital Systems ("SEED")

The California Health Care Safety Net Institute (SNI), which is affiliated with the California Association of Public Hospitals and Health Systems, launched SEED in January 2007. Ten NAPH members participate in SEED, including Alameda County Medical Center, Contra Costa Health Services, Kern Medical Center, Harbor-UCLA Medical Center, LAC+USC Medical Center, Riverside County Regional Medical Center, Arrowhead Regional Medical Center, San Francisco Community Health Network, San Mateo Medical Center, and Santa Clara Valley Medical Center.

Funded by the California HealthCare Foundation, SEED is a two-year program that seeks to help California public hospital primary care clinics implement improved chronic disease care for their growing numbers of diabetic patients. The initiative provides regional learning collaboratives, leadership development, funding, and consultant services for the adoption and spread of electronic disease registries and other quality improvements at participating public hospital clinics. These clinics focus on improving three aspects within the Chronic Care Model: delivery system design, self-management support, and clinical information systems. After the first year, data from the pilot 20 SEED clinics showed improved outcomes for the approximately 3,000 initial patients. This included reduced average hemoglobin (HbA1c) and cholesterol levels, as well as an increased percentage of patients with controlled blood pressure. In addition to the original 20 sites, a second cohort of 19 clinics began participating in SEED in early 2008.

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JPS HEALTH NETWORK

Hemoglobin A1c Reduction Diabetes Management Program

Recognizing that the prevalence of diabetes in its community was near 20 percent, the Fort Worth, Texas-based JPS Health Network implemented an intensive community health intervention targeting high-risk type II diabetic patients at one of the hospital's largest health centers.

Approximately 16 percent of the clinic's patients were diabetic, which led to an enrollment of 149 patients in 2006 during the initial phase of the intervention. The program's aim: to significantly reduce hemoglobin (HbA1c) levels in these high-risk patients through focused care management and intense patient involvement and education. JPS continuously studies the intervention's effect on patients' HbA1c levels, a key indicator of disease control.

Through this initiative, clinic staff conduct individualized assessments of each patient to ascertain specific diabetes management needs and reduce co-morbidities. Each patient then receives customized treatment on a weekly basis, which includes clinic visits, testing, education interventions, and treatment (either via face-to-face interactions, phone, or letter). Clinic providers stress patient involvement in the weekly treatment plans. After the first six months, the initial cohort's average HbA1c levels were reduced by 18.33 percent, which surpassed the program's original ten percent reduction goal. JPS has since implemented the program at six more health center sites.

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THE METROHEALTH SYSTEM

MetroHealth Buckeye Health Center

The MetroHealth System in Cleveland, Ohio, founded the MetroHealth Buckeye Health Center in 2005 to aggressively target chronic diseases—such as diabetes, obesity, and asthma—in high-risk communities. MetroHealth placed the health center in "Buckeye Plaza," a busy retail complex frequented by urban residents. Its strategic location encourages patients to make their doctor visits a part of their normal routine, allowing them to attend medical appointments or educational sessions without having to make a special trip to do so.

With the support of the Saint Luke's Foundation, the Buckeye Health Center implemented a diabetes self-management and education program in 2005 to help patients better manage their disease. The program's objectives: to improve diabetes-related outcomes, increase physical activity, improve lifestyle and eating habits, and enhance disease awareness. The center offers a recurring 4-week program throughout the year, educating patients about nutrition, exercise and medication. Each week's session has a defined set of objectives and builds on the previous week. Participants are required to attend four sessions to complete the program. Evaluations of patients who attended sessions from March 2006 through February 2007 showed that 80 percent of participants routinely performed self-glucose monitoring, 47 percent were able to lower their blood-glucose levels within six months, and 70 percent maintained low blood glucose levels after one year.

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NEW YORK CITY HEALTH AND HOSPITALS CORPORATION (NYCHHC)

Electronic Registry and Depression Screen

The public hospital system in New York City improved diabetes care by turning to advanced clinical information technology to help patients better manage their diabetes. In 2002, NYCHHC began pilot-testing an electronic registry in two hospitals to monitor patients' blood sugar, blood pressure, and cholesterol levels. Within 2.5 years, the number of diabetic patients with controlled blood sugar levels more than doubled at these pilot sites. The electronic registry has now been deployed system-wide to track and treat nearly 50,000 adult diabetics.

Registries are an important tool to improving patient care, but patient engagement is critical to effective chronic disease management. Depression, a common co-morbidity of diabetes, often impedes patients' ability to self-manage their disease. To address this problem, NYCHHC incorporated an evidence-based depression screening tool into its electronic medical record (EMR) at every facility to help primary care providers identify undiagnosed depression. After screening more than 20,000 patients in 2006, the hospital system discovered extremely high levels of untreated depression among outpatients with chronic disease—greatly exceeding the system's treatment capacity. NYCHHC is working to ameliorate this and, in 2007, implemented a system-wide training effort to equip primary care providers in the system with the resources to treat mild and moderate depression. As a result, NYCHHC plans to treat more patients for depression in 2008 than ever before. Many will receive treatment in primary care clinics, which is helping to provide patients with a more holistic clinical approach to treating diabetes.

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SAN FRANCISCO GENERAL HOSPITAL (SFGH)

Leading Organizational Change: Advancing Quality Through Culturally Responsive Care ("LEAD")

SFGH began LEAD, a hospital-wide initiative, in 2005. LEAD is comprised of several components targeting improved diabetes care in the hospital's General Medicine Clinic. For example, clinic staff developed a foot screening form and protocol to prompt referrals of all high-risk patients to the podiatry department for needed care.

To reduce racially disparate outcomes, the LEAD project offers small group classes for African-American diabetic patients with culturally-tailored curricula, as well as cultural competency awareness seminars for all staff working in the clinic. The patient classes teach self-management skills and help patients develop personal action plans to improve self-care. SFGH found that 95 percent of patients were adhering to their individual action plans one month after the classes started.

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Mobile Eye Van

Another SFGH effort, started in 2004, is its mobile eye van. The hospital uses the van to provide vulnerable diabetic patients with better access to necessary preventive eye screenings. The large mobile clinic carries state-of-the-art equipment to nine neighborhood health centers, allowing patients to have their vision tested by multilingual technicians who then submit the results to the hospital for review. Through the van initiative, SFGH reduces barriers to preventive care for diabetic patients residing in low-income neighborhoods.

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Improving Diabetes Efforts Across Language and Literacy ("IDEALL")

The IDEALL program was implemented in 2003 by the University of San Francisco's Center for Vulnerable Populations to promote better access to diabetes care and improve patient outcomes. Through IDEALL, four SFGH safety net clinics provided automated telephone diabetes self-management support to their patients with poorly controlled type II diabetes. In addition to regular clinic care, these patients received weekly automated interactive telephone calls in their native language (English, Spanish, and Cantonese), and if necessary, additional follow-up calls from a nurse care manager with appropriate language skills.

Evaluations of the intervention suggest that the automated calls engage patients in self-managing their condition, with especially high rates of engagement among those with limited literacy and limited English proficiency. Compared to usual care and group medical visit models, the program improved health behaviors, improved quality of life, increased detection of adverse or potentially adverse situations, and significantly enhanced the capacity of nurse managers to serve patients. An analysis of the automated diabetes support system found that it is cost-effective.[12] Impressed with the success of this intervention, a local health plan has begun plans to implement a similar automated phone model and is linking it to medication intensification. The program has been highlighted by the AHRQ Innovations Exchange,[13] and has been published in several leading journals.[14, 15, 16]

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UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON (UTMB)

The Stark Diabetes Center

Each year, more than 50,000 visits to UTMB involve a patient with diabetes. To better address the needs of these patients, UTMB opened the Stark Diabetes Center in June 2001 to comprehensively address diabetes through patient educational programs, clinical care, and expanded research efforts.

Specific Stark Diabetes Center activities include:

- An annual conference that provides nurses, diabetes educators, and other health care professionals with the latest research findings on diabetes care;
- A twice-monthly continuing medical education lecture series—broadcasted to primary care clinics—featuring nationally-recognized experts on diabetes-related topics;
- Community health fairs throughout the region that include diabetes screening and education;
- An American Diabetes Association–certified self-management training program provided to 1,000 patients annually via telehealth technology to patients in surrounding counties; and
- Regular endocrinology clinic visits and diabetes education conducted via telemedicine to a local American Indian reservation. The center's website also offers extensive archived versions of its continuing medical education seminars, available to the public at no charge.

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Improving Diabetes Care in Primary Care Clinics

UTMB's Department of Internal Medicine contains both the Stark Diabetes Center (see above) and primary care outpatient clinics that, in 2008, began a major initiative to improve the way primary care practi-

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tioners administer care to diabetic patients. UTMB's goal is to achieve and maintain target hemoglobin, blood pressure, and cholesterol levels for all clinic patients.

Staff at UTMB are accomplishing this goal by using newly-established clinical protocols that adhere to national guidelines. They also are further developing the hospital's electronic medical record (EMR) system to aid in clinical decisions. This will involve the implementation of a new Medical Decision Support System, still under development, to assist providers in carrying out the new standards of care. The EMR can use the information embedded in a patient's record (e.g., past and real-time lab-work, prescribed medications, and referrals) to help advise the practitioner on a further course of action at each appointment. The new system will also give administration the opportunity to evaluate each provider's patient outcome data, which will enable UTMB to offer providers monthly feedback on areas that may need improvement. UTMB plans to implement the Medical Decision Support System in December 2008.

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Conclusion

Public hospitals are committed to providing quality care to patients with chronic diseases, and the cases described above are only a sampling of NAPH member interventions to improve diabetes care. It is evident that hospitals wishing to improve diabetes care must be willing to devote time, effort, and resources to interventions that work best for their patient populations. To be successful, hospital leaders must champion improved diabetes care, establish steps to implement the specific intervention, measure its impact, and adjust accordingly.

All of the NAPH hospitals referenced above improved diabetes care with updated information technology systems (i.e., EMRs and diabetes registries). They focused on empowering patients to take control of their own health and provided practitioners with cultural competency skills and tools. Moreover, these hospitals increased outreach, education, and access to care for their surrounding communities. All these components are critical to program success. ■

The next installment in NAPH's series of research briefs on chronic care interventions in public hospitals will focus on asthma care.

Notes

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