

Challenges of Changing Health Behavior in Medically Underserved Communities

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Recognizing the need for community linkages has a long-standing history at Baylor University. In 1969, the Department of Community Medicine was established, and its chair, Dr. Carlos Vallbona, organized the Community Medicine Service to provide medical staffing for Harris County Hospital District (HCHD) community health centers (CHCs). The HCHD is the nation's fourth-largest public metropolitan health system (serving the Houston, Texas, metropolitan area) and, in collaboration with Baylor, was one of the first large health systems to provide integrated primary and preventive health care to the medically underserved community.*

Currently, a total of 11 CHCs provide primary care services for approximately 300,000 persons, administered by physicians, nurses, pharmacists, nutritionists, social workers, and health educators, as well as podiatry and dental services, specialty services in hospital-based clinics, and tertiary services at two full-service HCHD hospitals.

Community outreach includes "healthy life-style" education in eight school-based clinics, with oversight by a Baylor physician and a HCHD pediatric nurse practitioner. The HCHD Community Health Program also provides health promotion and disease-prevention educational outreach to approximately 100,000 persons per year through collaborative associations with community agencies.

The linkages established through this partnership constitute a complex and unprecedented level of cooperation as depicted in the chart at the right.

Demonstrated successes in collaborative community care

Diabetes-related primary care delivery serves as an illustrative study of collaborative success in care delivery and cost containment through linkages. In 1986, the Texas Department of Health (TDH) selected the Community Medicine Department of Baylor and the HCHD to be one of several diabetes translation sites throughout the United States to implement a Diabetes Control Program (DCP) supported by cooperative agreements with the Centers for Disease Control.¹

Four areas of care constitute the major focus of this initial effort: prevention and control of diabetes-related eye disease; prevention of foot complications and lower extremity amputations; and, prevention and control of cardiovascular disease, hypertension and hyperglycemia. The DCP developed interdisciplinary diabetes interventions for the targeted manifestations, as well as patient and professional education. The CHC diabetes population has grown from approximately 4,300 active users in 1986 to 14,000 in 2000.

Periodic studies of the care process conducted during the past 15 years show marked improvements in the delivery of care and the containment of cost for the three targeted areas:

- Diabetes-related eye disease A cost-benefit study of treatments for diabetic eye disease showed a five fold benefit-to-cost ratio by increasing screening and exams from a broader spectrum of caregivers.²
- Foot complications Yearly foot exams for high-risk patients increased from 18 to 76% between 1990 and 2000, and persons receiving lower extremity amputations decreased from 33 to 19% from 1990 to 93.
- Hyperglycemia Intensive diabetes education resulted in statistically significant decreases both in weight and in fasting blood glucose (FBG) during a one-year study.³

Persons having Type II diabetes mellitus with hypertension (approximately 65%), cross sectional studies show that blood pressure was controlled to 160/95 mmHg in 75% and 140/90 mmHg in 38%, but there was no significant change in control rates from 1990 to 2000. There is need for increased attention in this area, particularly based on the new goal of <130/85 mmHg for T2DM recommended by the Joint National Committee on Prevention, Detection, Education, and Treatment of High Blood Pressure.

Collaborative community-based outreach

Since 1995, with the support of the Texas Department of Health and the Texas Diabetes Council, Baylor and the HCHD have worked with African American and Hispanic communities in Harris County to identify and inform high-risk persons about diabetes, and recommend further testing when appropriate. During the first 3 years of the outreach program, approximately 15,000 persons were provided diabetes awareness information. Over 4,000 of these recipients chose to be screened; of that population 3% were identified as diabetic. In the program's first year approximately 6,000 encounters were made, at a cost of \$11/encounter; however, by 1999 there were approximately 20,000 encounters/year at a cost of \$3/encounter.

Another outreach effort, the Texas Diabetes Prevention and Control Initiative (TDPCI), began in 1999 as a part of a state wide effort to screen and educate undiagnosed persons in the community, improve access to medical care for those newly-diagnosed, educate providers about current diabetes management information, and increase public awareness.

Expanding the health care delivery system

A major strength of all primary care and outreach programs has been the integration of allied health professionals and their students into mainstream health care delivery. Patients and providers alike benefit from graduate-level, certified diabetes educators who provide culturally sensitive, developmentally appropriate educational programs and materials, consistent with current nationally recognized standards of practice.

Another strength of the programs is the collaboration between the TDPCI and academic institutions. Recognizing that the shift in the delivery of health care continues toward the public health sector, schools of nursing and allied health are challenged with securing valuable clinical experiences for their students. Integration of community education projects directed at primary and secondary care objectives is an important component of outreach efforts. Both private and public four-year university schools of nursing and pharmacy, along with one large public two-year community college, have been involved in educating the underserved communities over the past five years. Qualitative feedback from both clients and students has been positive, and students

state an increase in their knowledge of diabetes as well as in their ability to care for diabetic patients in tertiary care settings.

Challenges to linkages

Successful implementation of community-based programs requires a massive commitment of time and logistics to educate, enroll, and provide follow-up on patient care. Remote locations and weekend and evening hours are required to effectively reach working adults.

In public health institutions, physicians and staff are often stretched beyond reasonable limits to provide even the most basic primary care, and are limited in the amount of time allocated to prevention. The TDH-based Put Prevention into Practice initiative was recently implemented in our local CHCs to help balance immediate patient demands with preventive care.

Another major barrier for effective outcome monitoring and research is the lack of an electronic medical record system. Enhancing the linkages among academic, clinical, and research institutions with public health care agencies requires an integrated electronic medical record system to expedite medical decision making for patients while safeguarding confidentiality, improving outcome studies related to community-oriented primary health care, and enhancing financial and administrative due diligence. The authors have worked toward the goal of an automated information system for several decades, and hopefully within the next year it will be a reality.⁴

Both quantitative and qualitative results indicate a highly successful collaboration between Baylor's DFCM and the HCHD CHP in linking the missions of (a) the HCHD to provide quality, cost-effective health care delivery in a compassionate manner to Harris County residents regardless of ability to pay; and (b) the DFCM to enhance and promote community health by providing excellent and innovative teaching of primary health care, by delivering high-quality family and community-oriented primary care, and by discovering new knowledge that will contribute to continuous improvement in the processes and outcomes of care.

If academia and public health care institutions can work together chances of reducing the health inequalities between the rich and the poor increase. However, this challenge must include new behavioral models that the medically underserved can incorporate into a life style that is already burdened with seemingly insurmountable economic and cultural barriers. Baylor and the HCHD Community Health Program continue to provide leadership in this respect, with a program that not only cares for those in need but also reaches out in a compassionate manner to educate and help the medically underserved lead a healthier life style.

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