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HEALING HANDS

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Diabetes Care: Old Challenges, New Strategies

Chronic disease management, while difficult for anyone, poses special problems for people without a stable residence and for the clinicians who treat them. We asked HCH practitioners across the country to identify the major barriers they encounter in diabetes care for patients who are homeless, and to report any successes they have had in overcoming these barriers. Following are the special challenges they and their clients face.

DIET Homeless people have to eat whatever is available; meals are irregular (1-2 per day) with limited or no dietary choices. (Most food in shelters/soup kitchens is high in starch, sugar and fat.) To avoid hypoglycemia, patients on medication require 3 meals + 2 snacks per day — very difficult to obtain on a regular basis.

MEDICATION No place to store insulin if living on the street, limited access to required refrigeration, temptation to sell syringes. High cost of oral medications restricts availability, particularly for indigent clients. (Dedicated funding source needed.)

GLUCOSE MONITORING Glucometers and supplies for self-monitoring are difficult to obtain, particularly for uninsured patients. Medicaid may not cover monitor for all beneficiaries. Glucometers are often stolen in shelters. Test strips are expensive and hard to come by.

MENTAL ILLNESS/ADDICTION Restricts capacity to adhere to any treatment regimen. Unpredictability complicates education, treatment and self-care, requiring diligent follow-up. Some patients have residual cognitive dysfunction from mental illness and/or chronic addiction, even when sober. Alcoholism exacerbates hyperglycemia.

TRANSIENCE Prevents regular clinical follow-up, interrupts patient education, undermines long-term care required for management of chronic disease.

LACK OF HEALTH INSURANCE Limits access to specialty referrals (ophthalmology, nephrology, endocrinology, podiatry) and to pharmacy supplies. Interrupts continuity of care, particularly for diabetic persons discharged from jails without medication or treatment record.

Despite these formidable challenges, clinicians interviewed reported creative strategies to meet many of them.

Veronica Richardson, BSN, and Eloise Crayton, MA, BSN, direct chronic disease management and community health nursing at Grace Hill Neighborhood Health Centers in St. Louis — the lead health center in the Midwest Cluster of the Diabetes Collaborative. *[See article on pp. 3-4.]* Approximately 75% of homeless people served are African American. Of 427 diabetic patients identified from clinic records last year, 15% were homeless. Richardson is tracking these patients to assure that they are receiving the best diabetes care possible.

Outreach nurses conduct monthly diabetes screenings of sheltered homeless clients, offering shower shoes, socks and toothbrushes as incentives. Those diagnosed with diabetes are given a diabetic ID card to carry with them.

Clinicians educate shelter staff about the special needs of clients with diabetes. A dietician from the clinic is helping three area shelters that purchase their own food to plan appropriate meals for diabetes patients. "At the top of our wish list is a place where homeless people can get three planned meals a day," remarks Crayton.

Cluster clinics provide multidisciplinary services, including a monthly diabetes clinic where homeless patients having problems with disease management can get help. In an innovative approach to case management, Grace Hill uses health care coaches — trained lay paraprofessionals — to help patients get to clinic appointments.

Marti Alvaran, CRNP, MSN, a staff nurse practitioner and diabetes educator at HCH Maryland, does outreach, works in the clinic and focuses on self-management skills in her classes for diabetes patients. Most of her students are African American. Patients can begin the class at any point in the curriculum, but must complete all nine sessions dealing with the following topics: general facts, psychological adjustment, hyper/hypoglycemia, nutrition, exercise and how it relates to nutrition and education, illness, hygiene and use of the health care system.

Alvaran uses a book with simple language and good graphics that she highly recommends to other HCH clinicians — *Diabetes Care: Keeping Well with Diabetes* by Novo Nordisk. *[Call 800/727-6500 for information.]* She also uses role-playing "to learn what frustrates clients about provider encounters, and to help

clients understand how behaviors influence clinicians' response to them."

Adele O'Sullivan, MD, and **Rexine McKinley, RN,** provide diabetes care at the Maricopa County Health Department in Phoenix, Arizona. They see a large number of Hispanics and Native Americans with diabetes, referring the latter to the Indian Health Service for treatment. "Most of the diabetes we see is flagrantly uncontrolled — people who are off their meds and symptomatic, with glucose levels far above the diagnostic threshold," notes O'Sullivan.

McKinley identifies engagement — finding ways to keep clients coming back for ongoing diabetes education and care — as their biggest success. One of the ways they accomplish this is by distributing small quantities of medication at a time in medisets (pill organizers), to help clients keep track of oral medications and learn to adhere to a routine. Medisets are also a constant reminder to return to the clinic on a particular day, when the pills run out.

Sidewalks in Phoenix are often very hot, and most homeless people have ill-fitting shoes (if any) worn without socks, resulting in blisters and fungal infections. These problems are exacerbated for people with diabetes.

Clinicians teach patients to protect their feet and check them every day, or have a friend do so. Socks, winter blankets, foot soaks and TLC are offered as incentives to keep clients coming back. A volunteer podiatrist comes to the clinic once a month.

> "Motivation is the hardest part of diabetes self-management. Fear of complications alone can make you lose hope. What helps most is knowing someone like you who has made some progress, and tells you how. Then you know it is possible."
>
> **Polly Bullock, staff member, National HCH Council**
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> *Polly was diagnosed with diabetes one year ago. Since then, she has lost 122 pounds and reduced her HbA_{1c} from 11% to 4.5%.*

Susan Fleishman, MD, sees many diabetes patients at the Venice Family Clinic in Los Angeles, not all of whom are homeless. A large number are Hispanics, but homeless clients are predominantly white and African American. To prevent blindness through early diagnosis and treatment of retinopathy, Fleishman works hard to get annual retinal exams for her diabetes patients. Volunteer laser retinopathy specialists provide free evaluations and laser treatments.

Close attention to patient lifestyle guides Fleishman's treatment decisions. "We try to meet people where they are, do good initial assessments and individualize treatment protocols." Tight glucose control is possible with some homeless clients but not with others, she observes. "If you control blood sugar so tightly that a patient falls down on the street unconscious when she misses a meal, you aren't serving her best interest."

"Let patients choose what is important to them. Give as much encouragement as possible, and set things up so they can succeed," she advises HCH clinicians. "Sometimes it's more important to get clients into shelters than on pills, provide psychiatric medications before diabetes medications, get alcoholics to detox and begin diabetes treatment when they are sober." ■

New Practice Guidelines & Clinical Resources

Diabetes mellitus is a group of metabolic disorders characterized by high levels of blood sugar (hyperglycemia) resulting from defects in the secretion and/or action of insulin. Chronic hyperglycemia can result in blindness, kidney failure, amputations, heart disease, strokes, pregnancy complications and premature death. Diabetes is a leading cause of death and disability in the United States. The good news is that with early detection and aggressive clinical and self-management, excessive blood sugar can be reduced, thereby preventing or ameliorating these complications.[1,2]

At least 6% of the general population in the U.S. — nearly 16 million people — are estimated to have diagnosed and undiagnosed diabetes. In the most common form of the disease, complications can begin years before the clinical symptoms are evident.[1,2] Reliable statistics are not available for the homeless population, but diabetes is frequently seen among poor and homeless people.

Although the exact mechanisms by which diabetes develops are not fully understood, it is clear that both genetic and behavioral factors are involved.[3,4] Risk factors include family history of diabetes, obesity, sedentary lifestyle and a high-caloric diet. Certain ethnic and racial groups — particularly Native Americans, Hispanics and African Americans — are disproportionately affected by the disease.[1-3] Most often diagnosed in persons over age 44, diabetes is now increasing among children.[5]

The incidence of diabetes is expected to double within the next 25 years, since high-risk groups make up the fastest growing segments of the population. Increased screening is also expected to result in more diagnosed cases.[1,2]

NEW CLINICAL GUIDELINES In January 1999, the American Diabetes Association published new clinical guidelines for the classification, diagnosis and treatment of diabetes.[6] These recommendations were developed by an international expert committee in response to scientific research conducted over the past 20 years. Family practitioner and long-time HCH provider, **Dr. Karen Holman,** has selected important points from these new guidelines of which primary care clinicians should be aware:

- **Reclassification** The two basic types of diabetes have been reclassified to eliminate confusion. *Type 1* (formerly IDDM or juvenile onset) is an autoimmune disease that eventually leads to complete destruction of the insulin producing cells in the pancreas. *Type 2* diabetes(formerly NIDDM or adult onset) is characterized by defective insulin production and insulin resistance. Seen in both adults and an increasing number of children, it accounts for over 90% of cases. *Gestational* diabetes, which develops during pregnancy, may be either Type 1 or 2.3

- **New diagnostic criteria** Recommended diagnostic procedures and criteria are the same for Type 1 and Type 2 diabetes. The best way to make a diagnosis is to measure two separate fasting plasma glucose (FPG) levels, but other confirmed abnormal tests can also be used. The oral glucose tolerance test (OGTT) is no longer recommended. A confirmed FPG of 126 milligrams/deciliter or higher warrants a diagnosis of diabetes.

Glucose values between normal and diabetic levels ≥(110 and <126 mg/dL FPG) generally predict later development of Type 2 diabetes, which may be delayed or prevented by lifestyle modifications. Diagnostic threshold values are lower than those previously recommended (126 versus 140 mg/dL FPG) because recent research has shown that diabetic complications such as retinopathy and renal disease develop at lower glucose levels than previously suspected.[3]

RECOMMENDATIONS FOR DIABETES SCREENING OF ASYMPTOMATIC PERSONS

Test patients 45 years of age or older; repeat every three years.

Test before age 45 and repeat more frequently if patient has one or more of the following risk factors:

- Obesity (120% over desirable body weight or BMI ≥ 27 kg/m^2)
- First-degree relative with diabetes mellitus
- Member of high-risk ethnic group (black, Hispanic, Native American, Asian)
- History of gestational diabetes or delivering baby weighing > 9 lbs
- Hypertensive (≥140/90)
- HDL cholesterol level ≤ 35 mg/dL and/or triglyceride ≥ 250 mg/dL
- History of impaired glucose tolerance (IGT) or impaired fasting glucose (IFG) on prior testing

Expert Committee on the Diagnosis & Classification of Diabetes Mellitus

• **Who should be tested?** All people with diabetes symptoms and asymptomatic patients over 44 or with one or more risk factors, listed above, should be tested.[3,4]

• **Treatment changes** The treatment goal is close glucose control to minimize symptoms and complications. While tight control (FPG <120mg/dL, HbA_{1c}<7%) is best, more modest changes are also beneficial. Any improvement in blood glucose control has been shown to slow the development and progression of microvascular complications. More medical options are now available to help reduce blood glucose, including several new oral medications and insulins. Clinicians are advised to individualize glycemic management goals according to patient preferences, risks for hypoglycemia, and capacity to participate in their disease management. Since lifestyle changes (weight loss, dietary management, exercise) are key, motivating and supporting the patient is very important. Treatment should involve the health care team, patient, family or friends, and community resources.[3,4,6]

• **Monitoring of glucose control** Glycated hemoglobin (HbA_{1c}) is used to monitor glucose levels in diabetes patients, but is not recommended for routine diagnosis because of the lack of standardized tests and results. The major advantage of this method is that the blood specimen can be collected without regard to when the patient last ate.[3,4] (Glucose attaches to hemoglobin in direct proportion to the level of glucose in the blood. Since the average red blood cell lives three months, HbA_{1c} is a measure of glucose control over the previous three months.) *[For more details, see the following references.]*

NOTES & RESOURCES:

[1] CDC. "Diabetes: A Serious Public Health Problem," 1999; "National Diabetes Fact Sheet," November 1998; "Diabetes Surveillance, 1997": *http://www.cdc.gov/diabetes/pubs/pubs.htm*.

[2] National Institute of Diabetes and Digestive and Kidney Diseases: *http://www.niddk.nih.gov/health/diabetes/pubs/dmover/dmover.htm#scope*.

[3] Mayfield J. "Diagnosis and Classification of Diabetes Mellitus: New Criteria,"*Am Family Physician*, 58(6): 1355–1361, October 1998.

[4] Lipsky MS and Zimmerman BR. "Diagnosis and Management of Type 2 Diabetes," Monograph No. 1, 1999, American Academy of Family Physicians: *http://www.aafp.org/afp/monograph/199901/*.

[5] Cara JF. "Type 2 Diabetes in Children: Concerns About a Growing Threat," American Academy of Pediatrics 1999 Annual Meeting: *http://endocrine.medscape.com/Medscape/CNO/1999/AAP/AAP–11.html*.

[6] American Diabetes Association. "Standards of Medical Care for Patients with Diabetes Mellitus," Position Statement, January 1999, *Diabetes Care 22*(s1): 32-41: *http://www.diabetes.org/diabetescare/supplement199/S5.htm*.

[7] American Association of Diabetes Educators: *http://www.aadenet.org*. ■

Diabetes Collaborative: Reflections on Year 1

Last year, the Bureau of Primary Health Care initiated the Health Status and Performance Improvement Collaborative — a six-year initiative to improve the health status of underserved populations through positive changes in primary care.

Year 1 was devoted to improving diabetes care through the formation of a Diabetes Collaborative involving 86 community, migrant and homeless health centers nationwide. Project objectives are to decrease diabetes complications in special populations served, and to see that 90% of patients with diabetes receive two HbA_{1c} tests annually, at least three months apart. Beginning in Year 2, other collaboratives will be formed to address health disparities in infant mortality, immunization, asthma, depression, cardiovascular disease, HIV and cancer. The strategy is to involve all 700 federally qualified health centers — including HCH grantees — in at least one of these collaborative learning experiences.

PERFORMANCE IMPROVEMENT MODEL To accomplish these goals, the BPHC is partnering with the Institute for Healthcare Improvement (IHI) to teach health centers a performance improvement model called the Breakthrough Series. The model involves developing, testing and evaluating changes, first on a small scale over a short period of time. Successful changes are then implemented more widely, re-evaluated and shared with the larger collaborative.

Connie Sixta of IHI has been teaching this technique to clinician teams participating in the Diabetes Collaborative. "We are helping to redesign the care of patients with diabetes by encouraging practitioners to manage the disease proactively,"explains Sixta. "In this way, we hope to change the acute-care model of disease currently predominant in the U.S. to one that is more effective with chronic conditions."

NETWORK PARTICIPATION Six of the 19 health centers participating in the Midwest Cluster of the Diabetes Collaborative during FY 1998–99 are HCH grantees. The HCH Clinicians' Network is partnering with the

Midwest Clinicians' Network and the Michigan Primary Care Association to improve the care of diabetes patients who are homeless. The Network has just received a $50,000 renewal contract with the BPHC to continue this work in FY 1999–2000.

EARLY SUCCESSES **Julie Koppert, RNC, CDE,** is Project Coordinator of the Midwest Cluster. We asked her what was achieved during the Diabetes Collaborative's first year. Although a formal evaluation won't be conducted until the project's end, Koppert noted a number of improvements reported by individual clinics thus far. Some of these initiatives are still being tested before being piloted throughout the Collaborative.

- Increased access of homeless patients to vision and dental care;
- Heightened awareness of issues for homeless patients among clinicians practicing in Community Health Centers;
- Dietary collaboration with selected shelters and soup kitchens;
- Work with national companies to get better pricing for blood glucose test strips and shoes for patients with neuropathy;
- Development of a personal care card — a mini-record of medications, lab values and self-management goals — for homeless patients to carry with them.

"Most participants have learned that they can do something positive despite limitations,"observes Koppert. "For example, they can do an HbA1c every time patients come in, examine their feet, and find ways to track those who don't come back." Essential to the project's success is communication, which is fostered through listservs, twice monthly conference calls, and regional learning sessions every three months.

"We are beginning to see glucose levels come down, routine testing, patients involved in setting their own self-management goals, and clinicians using community resources to improve care," adds Sixta.

LESSONS LEARNED "Health centers are demonstrating that recommended standards of diabetes care can be followed in homeless and other special needs populations," asserts Koppert. "Clinicians have learned that they can come to some agreement with their diabetes patients about self-management goals. Instead of telling them what to do, providers are finding out what patients are able to do."

"We have also learned that clinicians' willingness to change and test new ideas is important," adds Sixta, "and that organizational leadership is critical for large system change."

Initially, all centers were expected to develop a computerized registry of their diabetes patients to facilitate tracking. This proved very difficult, since many clinicians had limited access to computers or didn't know how to use them. Clinics participating in Year 2 will be given a sample registry that can be adapted to their system. The collaborative is working with a pharmaceutical company to donate hardware and software where needed.

PLANS FOR YEAR 2 The BPHC plans to invite 80-100 more centers to participate in the Diabetes Collaborative in January. Application forms are available from regional project coordinators in the BPHC office and from state Primary Care Associations. Interested HCH projects are encouraged to apply.

"During the second year, we hope to pilot the personal care card and share it with clinics across the country as a model that works," says Koppert. "This is an exciting venture. At first we wondered if it was possible to adapt this particular change model to health centers serving special populations. We are learning that it is possible. Using this model to improve diabetes care should enable clinicians to apply it to the management of any chronic disease." ■

The HCH Clinicians' Network is operated by the National Health Care for the Homeless Council. For membership information, call 615/226-2292.

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