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The Public Health Approach to Diabetes

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### The Public Health Approach to Diabetes

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**AJN, American Journal of Nursing**

June 2007

Volume 107 Number 6 - Supplement: State of the Science on Diabetes Self

Management: Strategies for Nursing

Pages 39 - 42

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### Abstract

Community and system aspects.

Diabetes was first identified as a public health problem in the 1970s.

**1** With diabetes and prediabetes continuing to grow at unprecedented rates, addressing diabetes as a public health concern is even more important today. Yet the government, the media, and the general public have more readily accepted other diseases as public health issues<sup>2</sup>; for example AIDS, some forms of cancer, and the threat of avian flu. In contrast, diabetes and other chronic illnesses continue to be viewed as "clinical diseases" and are more often managed by an acute illness model. A clinical approach is inadequate to meet the growing demand that diabetes is placing not only on individuals but also on families, communities, and society. Diabetes treatment and prevention also require a population-based public health approach.

Glasgow and colleagues defined a public health approach to diabetes as "a broad, multidisciplinary perspective that is concerned with improving outcomes in all people who have diabetes, with attention to equity and the most efficient use of resources in ways that enhance patient and community quality of life."

**2** For people with diabetes, medical issues are not the only area that requires management; lifestyle, family, psychosocial, cultural, and economic issues also need attention.

The Institute of Medicine (IOM) called for refocusing attention on the three core functions of public health agencies

**3:**

- \* assessment and monitoring of the health of communities and populations to identify health problems and priorities
- \* formulation of public policies designed to solve identified local and national problems and priorities
- \* assurance that all populations have access to appropriate and cost-effective care, including health promotion and disease prevention services, and evaluation of the effectiveness of that care

The IOM issued this call to action in 1988. It remains as relevant today as it was almost two decades ago.

The Ecological Model of Health Behavior (see

[Figure 1](#), page 41) provides a framework for understanding the multiple levels of influence on health behavior.<sup>4, 5</sup> Its concentric rings describe four such levels; beginning at the core and moving outward, these are labeled: "individual," "family, friends, small group," "system, group culture," and "community and policy." As one moves outward through the rings, the influences upon health behavior become more complex, require more time to change, and are more difficult to evaluate. This article examines diabetes care in terms of the two outer levels of influence (system, group culture, and community and policy) in terms of the three core functions named by the IOM.

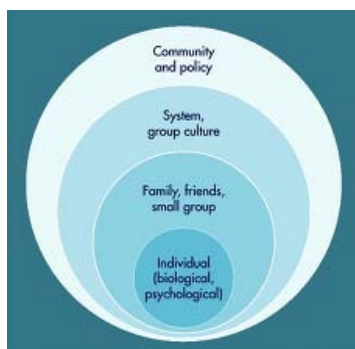


FIGURE 1. Ecological Model of Health Behavior

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## ASSESSMENT AND MONITORING OF COMMUNITIES' HEALTH

Assessment and monitoring of diabetes through surveillance data collected at the national, state, and county levels are necessary steps in defining and ultimately reducing the burden of diabetes. Data sources for surveillance include vital statistics (for example, birth and death records), hospital records, health surveys, and registries (population-based and disease-specific).

A major source of surveillance data for monitoring diabetes prevalence and health care behaviors is the Behavioral Risk Factor Surveillance Survey (BRFSS).

<sup>6</sup> This survey is administered annually in most states, and the Centers for Disease Control and Prevention coordinates and monitors the survey and analyzes the data. An additional surveillance tool, the California Health Interview Survey (CHIS), is administered every two years to a larger, more diverse (both by ethnicity and by age) population in California.

The California Diabetes Program, part of the California Department of Health Services, recently produced a report using CHIS data.

<sup>7</sup> The report provided information, organized by county, on diabetes prevalence and the number of people with diabetes who had had glycosylated hemoglobin (HbA<sub>1c</sub>) tests and foot exams. The report also provided information on the number of people who were overweight (body mass index of 25 or greater) or obese (body mass index of 30 or greater), who were not physically active, and who did not eat the recommended five servings of fruits and vegetables per day. Community organizations, local health departments, and policymakers are using this information to set priorities for interventions.

Population-based survey tools such as the BRFSS and CHIS are vital for monitoring diabetes, but they also have limitations. Administered by telephone, they collect self-reported data, and they are expensive. Increasing the size and diversity of the samples would greatly improve the usefulness of the results. Adding more questions to the tools, particularly concerning diabetes prevention and family history of diabetes, is also desirable. Advocacy and research by nurses and other health care professionals can spur such improvements.

Diabetes is not a reportable disease, as cancer and AIDS are, so there is no national registry. Until recently, diabetes registries were disease-based and self-contained, used within health care systems to monitor their own patient populations.

Recently, the New York City Department of Health and Mental Hygiene (NYCDOH) began to require laboratories that serve patients within a designated area of New York City to report all HbA<sub>1c</sub> data (see *AJN Reports*, June 2006). The health department is collecting this information in a city government-based registry. People can opt out of this registry after they receive a letter informing them of their results. Collected data also will be shared with the patient's physician. The NYCDOH believes the registry will help to monitor this population and improve outcomes.

<sup>8</sup> At the time of this writing, interventions that registry participants can access and use to improve their blood glucose control were still under development. In various meetings, some people, especially those with diabetes, have expressed concerns about privacy issues and ways the data will (or could) be used. The nursing profession should closely follow this effort, in terms of both its potential to improve patient outcomes and issues regarding patient privacy.

## FORMULATION OF PUBLIC POLICIES

Public policies on diabetes cover a broad range, from insurance coverage to school policies. Formulation of policies, which occurs at the national, state, and local levels, brings in many different perspectives. The challenge often lies in coordinating these perspectives to ensure that when a policy is established, it is meaningful and useful.

Insurance coverage for diabetes supplies and education has improved during the last decade at the state and national levels. Currently 46 states have some coverage for diabetes supplies and education.

<sup>9</sup> The American Diabetes Association, the American Association of Diabetes Educators, state diabetes prevention and control

programs, and many interested community constituents have contributed to success in this area. But there are still gaps in coverage. Nurses and other health care professionals need to work to obtain coverage for those without it, and this must be accomplished without significantly undermining current coverage. It is also important to assess the level of diabetes self-management training that actually results from state laws.

On the federal level, Medicare policies increase the potential for more people to receive better coverage for diabetes testing supplies, diabetes self-management training, and medical nutrition therapy. Continued evaluation of these policies will determine the extent to which Medicare recipients are using benefits, what barriers exist (for example, lack of patient and provider awareness about the benefits and reimbursement rates), and how best to overcome the barriers.

Policies that affect children with diabetes pose great challenges for the nursing profession, especially for school nurses. Technologies and medications that enable better control of diabetes, along with clinical trial data that prove good diabetes management prevents or diminishes chronic complications,

[6, 10](#) make it clear that children with diabetes must be able to follow their treatment plans safely while in school or at school-related activities. School nurses are the most appropriate personnel to monitor and supervise the health care of children with diabetes at school.[11](#) However, there is a shortage of school nurses in many communities nationwide.[12](#) Some states have passed legislation and others are considering bills that provide for qualified health professionals to train lay volunteers in routine and emergency diabetes care.[11](#)

## IMPROVING ACCESS TO CARE THROUGH SYSTEM CHANGES

Over the last decade the public health perspective on diabetes treatment and prevention has focused on changing health care delivery systems and connecting them to communities, especially through the Chronic Care Model (see

[Figure 1](#), "The Chronic Care Model," in "Diabetes Care: The Need for Change," page 14). This model summarizes the basic elements for improving care in health systems at the community, organization, practice, and patient levels.[13](#) Health systems that are adopting the Chronic Care Model are making significant contributions to the way care is delivered.

One of the best examples is the Health Disparities Collaboratives, which includes a diabetes collaborative, organized by the Bureau of Primary Health Care (BPHC). A division of the U.S. Department of Health and Human Services, the BPHC oversees programs that, as of 2004, offered health care to 13.1 million underinsured and uninsured people through more than 1,000 BPHC-funded health centers.

[14](#) Eighty-eight health centers joined the diabetes collaborative in the first phase, and another 115 joined in the second phase. This collaborative is using three different models: a learning model, the Chronic Care Model (referred to by the collaborative as the planned care model), and an improvement model.[15](#) One goal of the diabetes collaborative is to increase the number of patients who have two HbA<sub>1c</sub> tests per year. Early results indicate that the overall percentage of patients meeting this goal, for all models combined, was 300% greater than before the collaborative began.[16](#)

Renders and colleagues conducted a systematic review of interventions to improve diabetes management in primary care, outpatient, and community settings.

[17](#) A total of 41 studies met the inclusion criteria; 12 used interventions targeting health care professionals, 9 targeted organizations of care, and 20 targeted both. Organizational interventions that used a computerized database and follow-up reminders improved processes of care. Interventions that added patient education or that gave nurses a greater role in diabetes management led to improvements in patient outcomes and processes of care.

A study comparing nurse-directed care and usual care in blacks and Hispanics at three clinics in Los Angeles found significant improvements in HbA<sub>1c</sub> levels in the groups that received nurse-directed care.

[18](#) In addition, nurse-directed care resulted in more frequent performance of most process measures, including measurement of HbA<sub>1c</sub> every six months, eye exams at least annually, and foot exams at least biannually. Other work in high-risk ethnic populations and underinsured groups also showed improved process and outcome measures for patients with diabetes when community health workers teamed with nurses.[19](#)

The use of the Chronic Care Model and the implementation of interventions, led either by nurses or by nurses and community health workers in tandem, are part of progressive changes by health care systems to improve the care and outcomes of patients with diabetes. Such projects require commitment from many people within health care systems, who must be willing to work collaboratively and devote time to learning sessions. Data collection and reporting pose additional challenges.

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