

NDEP: Making System Changes for Better Diabetes Care

Evidence-based patient-centered care is needed to effectively manage diabetes and prevent the serious complications associated with the disease. In order to achieve that goal, systems change is essential.

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The National Diabetes Education Program (NDEP) has developed the online resource, Making System Changes for Better Diabetes Care (betterdiabetescare.nih.gov/),¹ to assist health care professionals across the country to make a difference in the way diabetes is prevented and treated.

According to the NDEP, the project was initiated to help address concerns outlined by the Committee on the Quality of Health Care in America in its 2001 *Crossing the Quality Chasm* report to the National Institute of Medicine. The report focused on how the health care delivery system can be designed to innovate and improve care. Evidence-based patient-centered care is needed to effectively manage diabetes and prevent the serious complications associated with the disease. The NDEP believes that in order to achieve that goal, systems change is essential.

The Web site contains information based on current, peer-reviewed literature and evidence-based clinical practice recommendations. Included are models, links, resources, and tools to help health care professionals (1) assess needs for systems change, (2) develop strategic plans, (3) implement tools for action, and (4) evaluate the systems change process.

NEEDS, PRIORITIES FOR CHANGE

Clinical practices can be viewed as microsystems that produce services for specific patient populations, according to the NDEP. Clinical care should be knowledge-based, patient-centered, and systems-minded. So

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when a clinical practice is to undergo a redesign in order to provide improved care, these design principles must be kept in mind.

The practice should complete a self-assessment to determine what it is doing, why it is doing it, and what should be done next. The process of self-assessment stimulates communication and leads to change.

“While our ultimate goal is improved diabetes outcomes such as incidence of complications, self-assessment and the tools discussed (in the program) focus on the process of change,” according to the Web site. Self-assessment for systems change helps the group get organized, set priorities, coordinate efforts, monitor change, and identify resources. In this section of the Web site, the NDEP gives three examples of self-assessment tools presented with links for more information.

FRAMEWORK FOR CHANGE

The next section of the NDEP resource covers the basic framework needed to implement systems change

and move toward a proactive, long-term model of care for patients with diabetes. Some elements of the framework are considered basic to all health care systems.

Evidence shows that applying emerging therapies and self-care behaviors in diabetes care can dramatically affect patients' outcomes. Therefore, it is important to apply an evidence-based approach to diabetes-related clinical care. Any change made to health care systems must reflect these principles.

Clinicians should be familiar with evidence-based recommendations, such as the American Diabetes Association Position Statement on the Standards of Medical Care for Patients with Diabetes Mellitus, and understand how evidence ratings are decided. The NDEP resource has links to many sources to facilitate evidence-based decision making.

Information systems. A reliable and effective information system is one of the most important tools a practice can use to provide timely, proactive care for patients, according to the NDEP. The Web site has links for additional information on setting up registries.

Other technological advances that enhance patient care are the use of electronic medical records and a networked, interactive system. "This sharing of information can make team decision making more effective and efficient," according to the Web site. Personal health records also enable patients to take responsibility for their own health, contribute to the record, and enable continuity of care when health care providers change over time. Nine essential functions allow an information system to support and improve the performance of clinical care (Table 1).

MAKING SYSTEM CHANGES FOR IMPROVED CARE

Because diabetes management remains symptom oriented and focused on acute illness, diabetes patients are often poorly served by the current health care system. The key clinical features of type 2 diabetes require continuous, proactive, planned care. This type of quality long-term management requires a systematic, comprehensive system of care that serves the needs of both patients and providers.

Health care providers need positive incentives to change. Economic incentives and better reimbursement rates can motivate providers to undertake behavioral interventions.

To make changes that improve care, the system must identify gaps between knowledge and practice in health care and prioritize an action plan. The action plan must include goals for improvement, which are based on the gaps identified.

TABLE 1. ESSENTIAL FUNCTIONS OF AN INFORMATION SYSTEM FOR OPTIMAL DIABETES CARE

1. Identify individuals with diabetes at the level of the provider.
2. Identify individuals requiring further intervention to achieve quality care.
3. Provide patients with information and support.
4. Provide health care providers with timely, complete, and structured information about the current status of an individual patient.
5. Provide health care providers with an up to date summary of patient requirements to meet current guidelines for quality care.
6. Generate population-based reports of quality of care for a defined population.
7. Facilitate communication between all team members and team access to important information.
8. Enable patient-centered care.
9. Enhance patient-provider interaction.

Goals. The US Department of Health and Human Services' Healthy People 2010 initiative lists national goals, many of which relate to diabetes, blood pressure, cholesterol, obesity, nutrition, and physical activity. An example of three goals for Americans with diabetes are:

- Increase the proportion of adults with diabetes whose condition has been diagnosed—target: from 68% to 80%.
- Increase the proportion of people with diabetes who receive formal diabetes education—target: from 45% to 60%.
- Increase the proportion of adults with diabetes who have an A1C measurement at least once-a-year—target: from 24% to 50%.

To achieve any given goal, a practice must determine baseline measures and an achievable target, then select and implement a number of small steps or objectives that would lead to achievement of the goal over time.

Models for chronic care improvement. Several models have been established that help providers make change systematically. Three examples of these are the Chronic Care Model, the Plan-Do-Study-Act (PDSA) Cycle, and the Enhanced Primary Care Model. The NDEP provides detail

What We Want to Achieve Through Systems Change: Team Care

According to the National Diabetes Education Program's (NDEP) online resource, *Making Systems Changes for Better Diabetes Care*, an important challenge to effective delivery of health care is finding a way to meet the needs of patients with diabetes by broadening the care delivery opportunities available to the primary care physicians (whether they are physicians, nurse practitioners, physician assistants, or other health care professionals) and nurses, dietitians, pharmacists, podiatrists, and mental health professionals.

Team care integrates the skills of a group of different health care professionals with those of the patient and family members into a comprehensive diabetes management program for life. Benefits include improved glycemic control, increased patient follow-up, higher patient satisfaction, lower complications rates, improved quality of life, and decreased health costs, according to the NDEP.

Successful team care must include:

- Commitment of policy makers to establish and sustain an infrastructure supportive of team care.
- Reimbursement for the services of core team members proportional to their expertise and time involved in diabetes team care.
- Regular communication among team members and documentation of provided care.

Forming a team requires:

- Commitment from leadership.
- Support from care providers.
- Identification of team members.
- Identification of the patient population.
- Stratification of the patient population according to the intensity of services needed.
 - Assessment of resources.
 - A system of coordinated, continuous, quality care.
 - An evaluation of outcomes and adjustment of services as necessary.

DEFINING THE TEAM

The composition of any given care team will vary depending on what the patient needs, patient load, organizational constraints, resources, clinical setting, and professional skills. The patient is at the center of the team, and the

core typically includes a physician, nurse, and a dietitian—at least one of whom is a certified diabetes educator. Other health professionals can be team members or collaborative consultants as needed; one individual must be the team coordinator.

The NDEP states that through early and proactive treatment, the team can minimize the patients' adverse health outcomes by assessment, intervention, and surveillance. Specifically, increased use of effective treatments to improve glycemic control and cardiovascular risk profiles can prevent or delay progression to renal failure, blindness, nerve damage, lower-extremity amputation, and cardiovascular disease. Care is further improved when patients participate in treatment decisions, set their own goals, are educated, and actively manage their disease. The result is improved patient satisfaction with care, better quality of life, improved health outcomes, and lower health care costs.

Research has shown that the team care approach results in effective diabetes management for children¹² and adults,^{3,4} as well as adults with diabetes and depression,⁵ kidney disease,⁶ periodontal disease,⁷ and foot ulcers.⁸

A cost-effective approach to diabetes management^{9,10} is case management by registered nurse specialists providing protocol-based care. Receiving medical direction as needed, the nurse can make clinical management decisions about the treatment of diabetes, lipids, hypertension, and diabetes complications; provide self-management education; coordinate team services and referrals to meet the patient's health care needs; and provide ongoing follow-up. Pharmacists also contribute to team care and improve chronic disease management by taking nontraditional roles when feasible.^{11,12}

TEAM CARE ADVANTAGES

Short-term cost savings associated with team care can result from shorter length of hospital stay, reduced rate of hospital readmission, or reductions in disabilities and associated costs, according to the NDEP Web site. In one study, the average length of stay for patients with diabetes was 56% shorter for team-managed patients than for patients managed by an internist alone and 35% shorter than for patients seen only by an endocrinologist. The reduction in

ACHIEVING TEAM CARE THROUGH SYSTEMS CHANGES

length of stay was largest when consultation was obtained early in the hospital stay.¹³ Another study showed significant reductions in readmission rates for team-managed patients.¹⁴ An outpatient team can deal with management issues or potential complications early, before they develop into serious problems that warrant a costly emergency room visit or hospital admission.

A study of patients who had average A1C levels of 7.5% reported improved quality of life on five scales, including symptom distress, general perceived health, and cognitive functioning. Compared with the control group, this group also had higher retained employment, greater productive capacity, and less absenteeism, resulting in significant short-term cost savings,¹⁵ according to the study.

LONG-TERM BENEFITS

Both the DCCT¹⁶ (Diabetes Control and Complications Trial) and the UKPDS¹⁷ (United Kingdom Prospective Diabetes Study) improved health outcomes by providing intensive management that involved team care, frequent patient follow-up care, counseling, and ongoing patient education. Intensively treated patients achieved an A1C value of 7.2% in the DCCT and 7% in the UKPDS, compared with 8.9% and 7.9%, respectively, for conventionally treated patients. Although these trials did not study aspects of the team care they practiced, it is unlikely that their results could have been achieved without a team approach.

Findings underscore the need for early diagnosis and treatment of type 2 diabetes. The NDEP stated that, although almost every patient can be expected to benefit from any increment in improved glycemic regulation, blood glucose control is more effective in preventing the initial development of microvascular complications than in preventing their progression once they have become established. Also, early therapeutic intervention is more cost-effective. In fact, there is a marked correlation between glycemic control and the cost of medical care, with medical

charges increasing significantly for every 1% increase in A1C above 7%.¹⁸ In fact, the increase in medical charges accelerates as the A1C value increases. ■

Resources: Team Care: Comprehensive Lifetime Management, www.ndep.nih.gov/resources/health.htm.

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on the models and their components.

Assessment and accountability. Auditing and feedback are important parts of methods of quality improvement. According to the NDEP, the act of benchmarking can improve productivity by identifying a problem, directing the action to be taken.

Change at various levels. In addition to improving patient and provider outcomes, change can be brought about at the community level, with groups of providers or with individual providers.

Three examples discussed in the NDEP resource offer

insight into quality improvement projects that have been successful.

SYSTEM CHANGE: WHAT DO WE WANT TO ACHIEVE?

This section of the resource looks at the key elements needed for providing continuous proactive care for patients with diabetes: patient-centered care, up-to-date clinical management, team care, and community partnerships. There are many advantages to enacting a care model that is focused on the patient's physical and

emotional needs. According to the Quality Chasm report, the following are dimensions of patient-centered care as they relate to diabetes patients:

- Respect for patients' values, preferences, and expressed needs
- Coordination and integration of care
- Information and communication
- Education, including strategies for providers to help patients manage their diabetes
- Physical comfort
- Emotional support—relieving fear and anxiety
- Involvement of family and friends

"Experts agree that it is the patients who in reality make the important choices that affect their health and well-being, and indeed it is the patient who is in control and experiences the consequences of his or her choices," according to the NDEP.

Bringing patient-centered care to your practice. All members of the health care team need to be on board and support the philosophy of patient-centered care. It may be necessary for the practice to redesign itself and undergo training to become more aware of cultural aspects of care. It is important to remember that learning patient self-management support skills takes additional time and training, and that when hiring a nurse or a dietitian, an individual should be a Certified Diabetes Educator (CDE).

Clinical management. Diabetes management that is evidence-based and patient-centered is essential to providing improved clinical care.

Team care. Team care integrates the skills of different health care professionals with those of the patient and family members into a comprehensive lifetime diabetes management program, according to the NDEP. This portion of the resource has been recently updated. Please see the accompanying sidebar, *What Do We Want to Achieve Through Systems Change: Team Care*.

Community partnerships. Community partnerships can provide access points for reaching people with diabetes through a common and trusted avenue. These partnerships can range from be traditional services, such as diabetes education sessions that can extend a health system's patient care, to nontraditional yet supportive partnerships with beauty and barber shops or faith-based organizations.

ADDRESSING ISSUES

The NDEP resource acknowledges that creating broad system changes is extremely challenging. The next section addresses some of the most common obstacles faced when enacting a systems change. Some topic areas are information systems, and how data management helps identify patients' needs; payment policies; cultural sensitivity; and

meeting the needs of a diverse population.

Professional training. It is critical that undergraduate, graduate, and continuing education programs for physicians, nurses, and other health care professionals seek to prepare providers with skills to enable them to be effective participants in a new health care system.

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EVALUATION

Improvement must be measured to evaluate how successful system changes are at achieving goals. Therefore, it is necessary to have a reliable system for measuring change and evaluating the outcome of the change. A section of the NDEP resource covers principles for collecting and using data.

- Commonly used diabetes improvement measures are:
- Agency for Healthcare Research and Quality (AHRQ): www.qualitytools.ahrq.gov.
 - HealthPartners 2005 Clinical Indicators Report: www.healthpartners.com/files/28455.pdf.
 - Institute for Health Care Improvement (IHI): www.ihl.org/ihl.
 - National Diabetes Quality Improvement Alliance: www.nationaldiabetesalliance.org.
 - The National Committee for Quality Assurance (NCQA) assesses, measures, and reports on the quality of care provided by the nation's managed care organizations: www.ncqa.org/.

TOOLS

The final portion of the NDEP Web site houses a variety of tools assembled in one place so that diabetes health care providers and planners can easily find, select, and implement them effectively into practice. "As a chronic disease, diabetes presents a long-term, multifactor clinical challenge to health care professionals as well as people with diabetes," according to the Web site. "Effective use of tools in the management of diabetes can empower physicians and other primary care providers to make good clinical judgments, involve patients in self-management, and provide timely, efficient, cost-effective care—all of which contribute to improved outcomes, including the well-being of people with diabetes." ■

1. Making System Changes for Better Diabetes Care. <http://betterdiabetescare.nih.gov/>. Accessed May 11, 2009.