The Future of Diabetes Education: Expanded Opportunities and Roles for Diabetes Educators
Annette Lenzi Martin and Ruth D. Lipman
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What is This?
The Future of Diabetes Education

Expanded Opportunities and Roles for Diabetes Educators

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Purpose

The purpose of the article is to explore challenges and opportunities associated with the state of practice for diabetes education and diabetes educators.

Methods

Observations, assumptions, predictions, and recommendations based on a literature review and the 2011 workforce study and workforce summit held by the American Association of Diabetes Educators (AADE) are presented.

Results

Demand for diabetes educators is projected to increase. The employer base will broaden beyond traditional outpatient venues and extend into industry, retail pharmacy clinics, and community-based organizations. Increasing roles in management, quality assurance, and technology interface design are possible for diabetes educators. Challenges limiting diabetes education such as poor understanding of what diabetes educators do and underutilization of diabetes education continue to need redress.

Conclusions

Increasing utilization of diabetes education and insight about health care trends can allow diabetes educators to thrive in the workplace of the future. Diabetes educators are urged to promote the evidence concerning the benefits of diabetes education, to work to increase physician
referrals, and to acquire needed competencies for the workplace of the future.

Even as the health care landscape continues to evolve, diabetes care is increasingly important given the substantial morbidity and mortality of this disease, its enormous costs, and the burgeoning prevalence of diabetes and prediabetes. In 2010, an estimated 25.8 million people in the United States had diabetes, and an additional 79 million Americans aged 20 years or older had prediabetes.¹ Projections indicate that if current trends continue, the prevalence of diabetes will increase to 33% of the US adult population by 2050.² This sobering prediction highlights the urgent need to adopt effective preventive measures and means to successfully manage the disease.

The care of chronic illnesses such as diabetes will change as new models of care take shape. These new paradigms, such as accountable care organizations (ACOs), emphasize attainment of quality outcomes through integrated, patient-centered, cost-effective care. Cost-conscious efforts are likely to prevail in the future, underscoring the need for diabetes interventions that produce desirable, cost-effective results. Diabetes self-management education (DSME), with its focus on empowering patients, fits well, although demonstrating a positive return on investment for DSME continues to be a challenge. Where fiscal viability is paramount to health care administrators, meeting this challenge is crucial because of the potential disconnect between those bearing the costs and those enjoying the savings.

The opportunities available to diabetes educators in today’s changing health care landscape likely will expand in the future given new paradigms of care, a growing emphasis on wellness, and the expected rise in diabetes prevalence.

**The Value of Diabetes Education: Evidence-Based Effectiveness**

The collaborative process of diabetes self-management education is a key step in improving the health outcomes and quality of life of people with diabetes. DSME focuses on 7 behaviors essential for improving health status and quality of life: healthy eating, being active, monitoring, taking medication, problem solving, healthy coping, and reducing risks. There is a growing evidence base that DSME improves clinical measures,³⁻⁵ reduces complications,⁶ and improves patient quality of life.⁷⁻⁸ Economic analyses show that DSME reduces health care system utilization and costs,⁹,¹⁰ and a meta-analysis of several studies linked DSME to fewer hospitalizations, lower direct medical costs, and positive return on investment.¹¹ The Diabetes Prevention Program (DPP) clinical trial demonstrated that among those subjects at risk of developing diabetes, lifestyle change education sharply reduced development of diabetes,¹² and long-term data indicate that this favorable effect persists.¹³

Among the reasons that diabetes education can reduce health care costs is its success in helping patients achieve lower glycemic levels. Data from 2 investigations suggest that a sustained reduction in A1C levels among adults with diabetes is associated with significant health care cost savings within 1 to 2 years of improvement in diabetes management.¹⁴,¹⁵ In another study, the improved glucose control, nutrition knowledge, and anthropometric measures resulting from a 3-month diabetes education program were estimated to reduce medical costs by $94,010.¹⁶ The challenge remains to increase awareness of these benefits as well as demonstrate the added value of delivery of DSME by credentialed diabetes educators and affiliated trained personnel. The knowledge, training, and experience of credentialed diabetes educators such as those who hold the CDE or BC-ADM demonstrate that they are up to the challenge of working with patients who present with complex cases or complicating issues.

**The Current Landscape of Diabetes Education**

Diabetes education involves an interdisciplinary team approach led by a credentialed diabetes educator. Within the 5-level framework of diabetes education practice (Table 1), the credentialed educator is a level 4 or 5 provider of DSME. Diabetes educators represent a variety of health disciplines, including registered and advanced practice nurses, registered dietitians, pharmacists, physicians, exercise physiologists, mental health professionals, optometrists, occupational health nurses, Veterans Administration case coordinators, and others.
Diabetes education is provided in a number of settings, primarily clinical outpatient/managed care settings. Traditional sites include physician offices (e.g., endocrinologists, primary care physicians), outpatient clinics, home health agencies, hospitals, and nursing care facilities. It is expected that DSME will continue to

Table 1

<table>
<thead>
<tr>
<th>Level</th>
<th>Characteristics</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: Non–health care professional</td>
<td>Includes CHWs and other nonprofessional health care providers who have little expertise in diabetes education and/or management but provide and/or support health care services to persons with diabetes.</td>
<td>This level comprises health care workers who do not have a clinical background but who nonetheless work with persons with diabetes in supportive or clinical environments. As nonclinicians, they do not progress to further levels without extensive additional training.</td>
</tr>
<tr>
<td>Level 2: Health care professional non–diabetes educator</td>
<td>Includes professional health care providers who have little expertise in diabetes education and/or management but provide and/or support health care services to persons with diabetes.</td>
<td>This level encompasses clinicians who care for persons with diabetes in their general practice but who have not received specialized entry-level training in diabetes disease management. These individuals may or may not progress to future levels. This is an entrance point to the specialty field of diabetes education.</td>
</tr>
<tr>
<td>Level 3: Noncredentialed diabetes educator</td>
<td>Providers who meet the AADE definition of diabetes educator but are not credentialed as a CDE or BC-ADM.</td>
<td>This level includes the clinician with several years of experience in the delivery of diabetes education. At this level, the diabetes educator is not credentialed and continues to gain knowledge and skill through preparation and practice.</td>
</tr>
<tr>
<td>Level 4: Credentialed diabetes educator</td>
<td>Encompasses diabetes educators with intermediate to advanced skills in the delivery of diabetes education who have successfully met the academic, professional, and experiential requirements set forth by the National Certification Board for Diabetes Educators (NCBDE).</td>
<td>Credentialed diabetes educators meet the academic, professional, and experiential requirements established by the certification board. Competency in diabetes education or management is validated by means of written examination.</td>
</tr>
<tr>
<td>Level 5: Advanced-level diabetes educator/clinical manager (non-Rx with protocols or Rx)</td>
<td>Individuals who have significant experience and advanced skills in the delivery of diabetes education. Practice arenas vary. These individuals meet the academic, professional, and experiential requirements set forth by the AADE and ANCC but may or may not be credentialed as a BC-ADM. Often these individuals serve in a consultative role.</td>
<td>Advanced/expert diabetes educators skillfully manage complex patient needs, assisting diabetes patients with therapeutic problem solving, counseling, and regimen adjustments. At this level, the educator models and mentors others in clinical and program management skills.</td>
</tr>
</tbody>
</table>

Abbreviations: ANCC, American Nurses Credentialing Center; BC-ADM, board certified in advanced management; CDE, certified diabetes educator; CHW, community health worker; DTR, dietetic technician, registered; LMHP, licensed mental health practitioner; LPN, licensed practical nurse; MA, medical assistant; RD, registered dietitian; RN, registered nurse; RPh, registered pharmacist.

*Source: American Association of Diabetes Educators.*
increase in nontraditional settings such as community venues (eg, community health centers, faith-based institutions, public libraries), retail pharmacy clinics, congregate housing for the elderly, nephrology clinics, bariatric surgery practices, worksites, schools, and diabetes-related companies. Targeted outreach into communities and the development of programs that focus on narrowly defined populations as audiences for DSME present additional opportunities for provision of DSME.

**Increased Demand for Diabetes Educators**

The demand for diabetes educators is projected to increase significantly through 2025 based on a literature review, key informant interviews, an analysis of Medicare claims from 2006 to 2009, a systematic search of employment websites, and analysis of US Bureau of Labor Statistics data from 2010.18

Another factor underpinning this predicted rise in demand for diabetes educators is the federal government’s commitment to expand federally qualified health centers (FQHCs) and other community health centers (CHCs) under the provisions of the Patient Protection and Affordable Care Act (ACA). An expansion of FQHC and CHC services will give uninsured and underinsured individuals much-needed access to DSME and diabetes self-management support (DSMS). This will generate more demand for level 1 and 2 diabetes education practitioners, many of whom are community health workers (CHWs). The ACA recognizes CHWs as important members of the health care workforce, and the literature provides evidence that CHWs can improve access, knowledge, and other outcomes.19,20

Although currently about 80% of level 3 to 5 diabetes educators provide direct patient care, greater demand for CHWs could increase the need for diabetes educators to train and supervise CHWs in core diabetes skills and competencies.21 Thus, increased employment for CHWs at levels 1 and 2 could also increase the need for higher level educators.

**Broadened Scope of Employment Settings**

With the growing demand for diabetes educators will come a broadening in the employer base for these practitioners (Table 2).18

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**Table 2**

Selected Expanding Base of Employers of Diabetes Educators

<table>
<thead>
<tr>
<th>Levels 1 and 2 Diabetes Educators</th>
<th>Levels 3, 4, and 5 Diabetes Educators</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Federally qualified health centers and community health centers</td>
<td>• Integrated hospital systems</td>
</tr>
<tr>
<td>• Community-based programs for seniors</td>
<td>• Endocrinology practices; multispecialty physician practices; optometry practices; pediatric practices</td>
</tr>
<tr>
<td>• Public health care programs</td>
<td>• Home health care companies</td>
</tr>
<tr>
<td>• Integrated hospital systems</td>
<td>• Long-term care facilities</td>
</tr>
<tr>
<td>• Endocrinology practices; multispecialty physician practices</td>
<td>• Adult and pediatric cardiology practices</td>
</tr>
<tr>
<td>• Home health care companies</td>
<td>• Medical weight management programs</td>
</tr>
<tr>
<td>• Long-term care facilities</td>
<td>• Diabetes industry (pharmaceuticals; medical devices)</td>
</tr>
</tbody>
</table>

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Emerging Models of Health Care Delivery

Accountable care organizations (ACOs) are groups of physicians, hospitals, and other health care organizations that share accountability for the quality, cost, and overall care of an assigned population and share in the cost savings that may ensue. Key to an ACO’s success is the integration of providers who adopt a team approach to care, which must include health promotion that either prevents or mitigates the effects of chronic conditions such as diabetes, underscoring the value of providing DSME to engage patients in successfully managing their disease. The growth of such integrated systems will increase the demand for higher level diabetes educators (levels 3-5) to assume managerial roles.

Patient-centered medical homes (PCHMs) are another approach for providing comprehensive primary care. The PCMH facilitates partnerships between patients, physicians, and, when appropriate, families. A vital component of PCHMs is optimal treatment of chronic diseases such as diabetes, and programs must involve patients in setting goals and priorities regarding lifestyle changes. Standards released by the National Committee for Quality Assurance (NCQA) in 2011 permit advanced practice nurses and physician assistants, who may be CDEs, to lead PCMHs. As with ACOs, an increase in PCHMs will create greater demand for higher level educators to manage DSME programs.

In nurse-managed health centers (NHCs) or community nursing centers (CNCs), nurse practitioners deliver primary care for culturally diverse populations who are likely to experience disparities in health. These settings blend traditional medical management with nursing case management and community-based health promotion strategies. As NHCs expand in operation, nurse practitioners who are level 3, 4, or 5 educators will be in demand to provide or manage DSME in these settings.

Industry

Manufacturers of diabetes-related pharmaceuticals and devices are employing diabetes educators to teach patients as well as primary care physicians and staff about diabetes self-management as it relates to the companies’ product-specific training. Individuals who hold these positions evaluate training and implement new programs to keep providers up to date, facilitate webinars or other computer-based training offerings, lead diabetes education for targeted health care professionals, and make clinical presentations to key health care stakeholders and managed care organizations. Although educators may be involved in supporting aspects of clinically focused sales, they are valuable members of the team, providing patient education on use of a specific product and the knowledge needed to avoid predictable pitfalls.

Retail-Based Clinics

Retail pharmacy medical clinics are one of the fastest growing provider segments in the US health care system. In addition to providing vaccinations and treating minor injuries, some pharmacy clinics offer expanded services for diabetes. Diabetes educators can offer these services as well as initiatives with health care organizations. Additional opportunities exist for pharmacists to provide medication therapy management services and for dietitians, who can provide medical nutritional therapy.

Community-Based Settings

Innovative community health projects are encouraged by the US Department of Health and Human Services to promote healthful weight, physical activity, and good nutrition. Although inclusion of a diabetes educator is not required to deliver the year-long National Diabetes Prevention Program (DPP) championed by the Centers for Disease Control and Prevention (CDC), programs whose staff includes a diabetes educator have been shown to be effective. Beyond serving as lifestyle coaches in the National DPP, diabetes educators can supervise lifestyle coaches and act as “master trainers” who train the trainers.

Workplace Wellness Programs

Worksite health promotion programs have been shown to decrease employer health costs and employees’ risk for chronic disease among both large and small organizations, and health insurers have demonstrated their capabilities in developing, implementing, and marketing such programs. Diabetes educators may find opportunities to apply their expertise in programs to screen employees for prediabetes or diabetes as well as provide DSME in group or individual sessions.

Renal Disease

Diabetes is the leading cause of kidney failure. When diabetes self-management education was added to end-stage renal disease care, there were significant decreases in
hospital admissions and limb amputations as well as improved diabetes-related quality of life scores. A quality improvement model for optimizing care of those with both diabetes and end-stage renal disease calls for inclusion of self-management education. This suggests another area of opportunity for diabetes educators to engage.

### Home Health Care and Long-Term Care Facilities

The rapidly growing elderly population will continue to broaden the market for home health care and long-term care facilities. Because diabetes assessment, care, and education are concerns for many home health care patients, the need for credentialed educators to serve as resources for home care nurses and aides will likely increase. This need also extends to long-term care facilities: A recent study revealed the need to improve diabetes management education for residents, families, and all health care providers in this setting.

### Changing Roles, Responsibilities, and Qualifications of Diabetes Educators

The roles and responsibilities of diabetes educators involve interaction with patients, physicians (primary care and specialists), and other providers on the diabetes education team (eg, nurses, pharmacists). Higher level diabetes educators counsel patients and provide ongoing coaching, oversee the efforts of level 1 and 2 educators, provide guidance and supervision to diabetes prevention programs, and provide consultation to corporations for workplace wellness programs.

It is clear that diabetes educators in the future will be challenged to possess a wide range of competencies: in-depth knowledge of diabetes, breadth of knowledge in care management and wellness, skills in counseling and supporting patients in achieving behavior change over time, skills in program management, and knowledge of the business of care provision in terms of health information technology and quality measurement. Furthermore, diabetes educators need to advocate to increase patient referrals to and participation in DSME, helping fill gaps in diabetes care.

State licensure of diabetes educators is currently in its infancy, with Kentucky leading the way as the first state to require a license to provide diabetes education. State licensure can ensure patient protection, increase recognition for the specialty that is diabetes education, and reinforce high standards of care.

### Workforce Challenges for Diabetes Educators

Several challenges confront diabetes educators in the evolving health care landscape. One primary concern is a poor understanding, on the part of the public and some health care professionals, of what diabetes educators do. This is compounded by the lack of a standard job classification by the US government. The current Standard Occupational Classification disseminated by the Bureau of Labor Statistics has no distinct classification for diabetes educators, instead including these professionals under the rubric of “health educator.” A separate code for diabetes educators in the national workforce data would raise the visibility of diabetes educators and allow them to be tracked as their own labor category.

Suboptimal utilization of DSME, due to either inadequate referrals or patient dropout, continues to be a fundamental challenge. Poor reimbursement for DSME is another major obstacle to utilization of diabetes education and achievement of favorable outcomes.

### Recommendations

Several actions are recommended to increase the utilization of diabetes education, improve diabetes care, and enable educators to thrive in the future workplace (Table 3). Promoting the value of DSME in improving health outcomes for persons with diabetes and decreasing health care costs remains a priority.

The pivotal role of the diabetes educator in patient-centered care for serious chronic disease must be conveyed. Diabetes educators are urged to market themselves as integral members of the diabetes care team whose work in DSME focuses on behavior change that leads to successful diabetes self-management and reduces hospitalization, readmissions, and other high costs associated with poorly managed diabetes. In their self-marketing efforts, diabetes educators must be cognizant of the specific concerns of their audience by becoming familiar with the needs, available options, and perspectives of their potential employers.

Today’s inadequate reimbursement for DSME and DSMS spotlights the need to improve insurance coverage. Efforts by diabetes educators may be aided by the trend toward pay-for-performance programs, which provide financial incentives to physicians who meet defined quality, efficiency, or other targets. Two proposed quality measures assessing the percentage of patients with diabetes...
who are referred for DSME are currently under consider-
ation by the American Medical Association–convened
Physician Consortium for Performance Improvement®
and the NCQA.

Conclusions

The roles of diabetes educators and the settings in
which they work are changing and expanding. Because
of the diabetes epidemic and its enormous health and
economic burden, effective diabetes care and prevention
are growing priorities among clinicians and policymak-
ers, thus increasing potential opportunities for diabetes
educators. The future will bring a broader scope of work
settings for diabetes educators that includes not only
traditional hospital outpatient and physician office posi-
tions but also a variety of nontraditional settings includ-
ing industry, community venues, retail clinics, and
specialty clinics. Diabetes educators of the future may
have opportunity for managerial roles, expanding their
scope to include performance and quality measurement.

To realize the predicted expansion in opportunities,
diabetes educators must take an active role in cultivating
an improved environment for diabetes care. Educators
are urged to promote the evidence-based value of diabe-
tes education, work to increase physician referrals by
marketing themselves to providers and potential employ-
ers, acquire needed skills and competencies for the
future, and support reimbursement reform and standard-
ization within the specialty that is diabetes education.

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