

National Standards for Diabetes Self-Management Education

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PROBLEM STATEMENT — Diabetes Self-Management Education (DSME) is the cornerstone of care for all individuals with diabetes who want to achieve successful health-related outcomes. The National Standards for DSME are designed to define quality diabetes self-management education that can be implemented in diverse settings and will facilitate improvement in health care outcomes. The dynamic health care process obligates the diabetes community to periodically review and revise these standards to reflect advances in scientific knowledge and health care.

Therefore, the Task Force to review the National Standards for DSME was convened to review the current standards for their appropriateness, relevancy, and scientific basis, and to be sure they are specific and achievable in multiple settings.

PROCEDURE FOR REVISION OF THE NATIONAL STANDARDS FOR DIABETES SELF-MANAGEMENT EDUCATION PROGRAMS

— The Task Force to Review and Revise the National Standards for Diabetes Self-Management Education Programs decided to do the following:

1. Critically review the current standards and prepare an evidence-based review of the literature.
2. Revise the National Standards for Diabetes Self-Management Education Programs as appropriate.

Establishing procedure

The Task Force began this task by outlining a process to be used for accomplishing its charge:

- Examine the adequacy of representation on the Task Force itself to ensure fair, relevant, and impartial revisions of the National Standards (the sponsoring organization for this revision of the National Standards is the American Diabetes Association).
- Perform an initial review of the current standards to identify areas that need to be addressed.
- Collect input from individuals and organizations who utilize the current standards.
- Set a timeline for accomplishing the charge.
- Critically review each standard and perform a review of the literature for each.
- Review new trends in diabetes education and care.
- Review the National Standards to ensure quality and consistency with the current American Diabetes Association Standards of Medical Care.
- Obtain critiques from secondary sources interested or involved in diabetes care.
- Perform a final review of the revised National Standards.
- Recommend the revised National Standards to the organizations represented on the Task Force for their review, endorsement, and implementation.
- Publish the new National Standards.

REPRESENTATION ON THE TASK FORCE

— Representation on the Task Force consisted of individuals from all major organizations and disciplines with significant interest in the provision of quality diabetes care and self-management education. It was decided that payers or purchasers of care would be used only as advisors and

not as Task Force members. Thus, the following organizations, federal agencies, federally funded programs, and disciplines are represented on the Task Force:

Organizations, federal agencies, and federally funded programs

- American Diabetes Association
- American Association of Diabetes Educators
- American Dietetic Association
- Veteran's Health Administration
- Centers for Disease Control and Prevention
- Indian Health Service
- National Certification Board for Diabetes Educators
- Juvenile Diabetes Foundation International
- Diabetes Research and Training Centers

Disciplines

- Behaviorist (EdD)
- Pharmacist (RPh)
- Physician (MD)
- Registered dietitian (RD)
- Registered nurse (RN)

PROCESS — The goal for review, revision, and publication completion was 2 years. The committee first convened in October 1998 and reconvened in January, May, and October 1999. The technical review subgroup convened in July 1999 and then held weekly conference calls from July through October 1999. The entire group reconvened in October 1999 to finalize the proposed draft of the revised standards to share with the represented organizations. The represented organizations were sent the final draft December 1999. All represented organizations approved the revised standards. The final document was submitted for publication in spring 2000.

STANDARDS

Structure

Standard 1. *The DSME entity will have documentation of its organizational structure, mission statement, and goals, and will recognize and support quality DSME as an integral component of diabetes care.*

In the business literature, case studies and case report investigations on successful management strategies emphasize the

importance of clear goals and objectives, defined relationships and roles, and managerial support (1–4). This concept is relatively new in the health care industry. The business literature, and health policy experts and organizations have emphasized written commitments, policies, support, and the importance of outcome variables in quality improvement efforts (1,5–16). The continuous quality improvement literature also stresses the importance of developing policies, procedures, and guidelines (1,5).

Documentation of the organizational structure, mission statement, and goals can lead to efficient and effective provision of education programs. Documentation of organizational structure delineates channels of communication, and organizational commitment to educational programs (17–20). According to the Joint Commission on Accreditation of Health Care Organizations (JCAHO) (5), this type of documentation is equally important for small and large health care organizations. Health care and business experts overwhelmingly agree that documentation of the process of providing services is a critical factor in clear communication and provides a solid basis on which to deliver quality diabetes education (1,5,12,14,15). **Standard 2.** *The DSME entity will determine its target population, assess educational needs, and identify the resources necessary to meet the self-management educational needs of the target population(s).*

Clarifying the target population and determining self-management educational needs allow health care providers to focus resources and maximize health benefits (14,21–23). The assessment of the population should identify the educational needs of all individuals with diabetes, not just those who frequently attend medical appointments (21). DSME is a critical component of diabetes treatment (24), yet the majority of individuals with diabetes do not receive any formal diabetes education (25). Demographic variables, such as ethnic background, formal education level, reading ability, and barriers to participation in education, must be considered to maximize the effectiveness of self-management education (26–29).

Standard 3. *An established system (committee, governing board, advisory body) involving professional staff and other stakeholders will participate annually in a planning and review process that includes data analysis and outcome measurements, and addresses community concerns.*

An established system (e.g., committee, governing board, advisory body) provides a forum and mechanism essential for activities that serve to sustain the DSME entity (9,18,19,30,31). Consumer, professional, and community involvement in educational planning and evaluation of outcomes (1,5,12,14,15) can result in DSME that is more responsive to consumer-identified needs, more culturally relevant, and of greater personal interest to consumers (30,32–35).

Standard 4. *The DSME entity will designate a coordinator with academic and/or experiential preparation in program management and the care of individuals with chronic disease. The coordinator will oversee the planning, implementation, and evaluation of the DSME entity.*

The role of the coordinator is essential to ensure that quality diabetes education is delivered through a coordinated and systematic process. As new and creative methods to deliver education are explored, the coordinator plays a pivotal role in ensuring the accountability and continuity of the educational process (19,36–38). The individual serving as the coordinator will be most effective if there is familiarity with the lifelong process of managing a chronic disease (i.e., diabetes).

Standard 5. *DSME will involve the interaction of the individual with diabetes with a multifaceted education instructional team, which may include a behaviorist, exercise physiologist, ophthalmologist, optometrist, pharmacist, physician, podiatrist, registered dietitian, registered nurse, other health care professionals, and paraprofessionals. DSME instructors are collectively qualified to teach the content areas. The instructional team must consist of at least a registered dietitian and a registered nurse. Instructional staff must be Certified Diabetes Educators (CDEs) or have recent didactic and experiential preparation in education and diabetes management.*

DSME has been shown to be most effective when delivered by a multidisciplinary team with a comprehensive plan of care (39,40–50). The multidisciplinary team utilized in DSME is one in which the different team members retain their individual disciplinary identity, work interdependently, consult with one another, and have shared goals (51). The team should have a collective combination of expertise in medical treatment, medical nutrition therapy, teaching skills, and behavioral psychology (8,51–56). It is essential in this collaborative and integrated team approach

that individuals with diabetes assume an active role in their care (45).

Nurses have been utilized most often as instructors in the delivery of formal DSME (39,52,57–61). Since the emergence of medical nutrition therapy (40,62–65), registered dietitians have become an integral part of the diabetes education team. In recent years, the role of the diabetes educator has also expanded to other disciplines (8,40–42,51,65–69). Although there is no evidence demonstrating that one discipline is more effective than another, the literature review favors current practice that utilizes the registered nurse and registered dietitian as key members of the multidisciplinary team preparing and assisting in the delivery of DSME (43,44,55,66). In addition to the registered nurse and registered dietitian, a number of articles reflected the ever changing and evolving health care environment and included other health professionals (e.g., physicians, behaviorists, pharmacists, exercise physiologists, ophthalmologists, optometrists, and podiatrists) and paraprofessionals as members of the educational team (41,42,68–75). However, the literature reflects that additional research is needed to demonstrate that these professionals may play a major role on the diabetes education team.

Based on expert consensus, there is support that the primary instructors on the diabetes team require specialized diabetes and educational training beyond their basic academic preparation (57,76–81). Certification as a Diabetes Educator (CDE) by the National Certification Board for Diabetes Educators (NCBDE) is one way that health care professionals can demonstrate mastery of a specific body of knowledge, and such certification has grown to be the community-accepted credential for DSME (82). According to the NCBDE, there are currently more than 10,000 CDEs in the U.S. **Standard 6.** *The DSME instructors will obtain regular continuing education in the areas of diabetes management, behavioral interventions, teaching and learning skills, and counseling skills.*

Studies indicate that instructors without specialized training in diabetes (51,83–89), behavioral interventions (74,76,79,90–92), teaching and learning skills (53,93–97), and counseling skills (78,98) may not focus on patient behavior change, and therefore, clinical outcomes may not improve. Quality diabetes care and education require that professional staff have continuing education in diabetes educational strategies and

behavioral interventions beyond their basic preparation (77,78,85,87,94,98,99). Behavior and lifestyle changes are the keys to successful self-management of diabetes (74,76). Selected studies of health care professionals have shown a need for increased knowledge and ability to utilize behavioral interventions with individuals living with diabetes and other chronic diseases (79,98–101). Therefore, the instructors delivering quality DSME must remain current in therapeutic modalities and medical nutrition therapy, as well as teaching skills and behavioral interventions.

Standard 7. *A written curriculum, with criteria for successful learning outcomes, shall be available. Assessed needs of the individual will determine which content areas listed below are delivered.*

- Describing the *diabetes disease process* and treatment options
- Incorporating appropriate *nutritional management*
- Incorporating *physical activity* into lifestyle
- Utilizing *medications* (if applicable) for therapeutic effectiveness
- *Monitoring* blood glucose, urine ketones (when appropriate), and using the results to improve control
- Preventing, detecting, and treating *acute complications*
- Preventing (through *risk reduction* behavior), detecting, and treating chronic complications
- *Goal setting* to promote health, and *problem solving* for daily living
- Integrating *psychosocial adjustment* to daily life
- Promoting *preconception care*, management during *pregnancy*, and *gestational diabetes management* (if applicable)

The literature supports a strong core group of topics in the design of the curriculum (24,79,80,102–115). The curriculum is defined as a coordinated set of courses and educational experiences to accomplish a set of outcomes (116). The individual with diabetes needs the knowledge and skills to make informed choices, to facilitate self-directed behavior change (24,117,118), and ultimately to reduce the risk of complications (40,44,112). The value of diabetes education is evident from research demonstrating that patients who never received diabetes education showed a striking 4-fold increased risk of a major complication (119).

Table 1—Diabetes education curricula

American Diabetes Association: *Life With Diabetes: A Series of Teaching Outlines* by the Michigan Diabetes Research and Training Center; 1997

American Association of Diabetes Educators: *A Core Curriculum for Diabetes Education, Third Edition*, 1998

The content areas above provide instructors with an outline for developing this content. These content areas are presented in behavioral terms and thereby guide the instructor toward creative delivery methods that promote behavior change rather than simply acquisition of knowledge. The above-listed content areas are designed to be applicable in all settings. They represent topics that can be developed in basic, intermediate, and advanced levels (see Table 1 for examples of published diabetes education curricula). Research is needed to develop further a validated core curriculum.

Process

Standard 8. *An individualized assessment, development of an educational plan, and periodic reassessment between participant and instructor(s) will direct the selection of appropriate educational materials and interventions.*

Each participant or significant other living with diabetes brings unique life experiences and preferences to an encounter that help determine the intervention. The assessment includes relevant medical history, cultural influences, health beliefs and attitudes, diabetes knowledge, self-management skills and behaviors, readiness to learn, cognitive ability, physical limitations, family support, and financial status (26,27, 54,120–122).

Multiple studies evaluating attitudes and beliefs toward diabetes indicate the importance of individualizing education plans based on the assessment (25,40,54, 117,120,123–134). The bulk of the literature supports the importance of attitudes and health beliefs in diabetes care outcomes (40,53,54,135–139).

Periodic individualized reassessment determines attainment of the educational objectives or the need for additional and creative interventions and future reassessment (80,128,140–142).

Standard 9. *There shall be documentation of the individual's assessment, education plan, intervention, evaluation, and follow-up in the permanent confidential education record. Documentation also will provide evidence of collaboration among instructional staff, providers, and referral sources.*

Documentation of patient encounters in the education record guides the educational and medical process, provides evidence of communication among instructional staff, providers, and referral sources, and may prevent duplication of services (143–147). It is only through documentation in the record that information on quality of diabetes care and adherence to practice guidelines can be reviewed (145,148). The use of evidence-based performance and outcome measures has been adopted by organizations and initiatives such as the Health Care Financing Administration (HCFA), the National Committee for Quality Assurance (NCQA), the Diabetes Quality Improvement Project (DQIP), the Health Plan Employer Data and Information Set (HEDIS), and JCAHO (149–151).

Research suggests that the development of standardized procedures for documentation, training of health professionals to document appropriately, and the use of structured standardized forms based on current practice guidelines can improve documentation and may ultimately improve quality of care (148,152,153).

Outcomes

Standard 10. *The DSME entity will utilize a continuous quality improvement process to evaluate the effectiveness of the education experience provided, and determine opportunities for improvement.*

Continuous quality improvement (CQI) is an effective methodology for the development, implementation, maintenance, and enhancement of quality DSME (3,11,154,155). The effectiveness of any systematic educational effort is dependent on clearly defining set organizational goals, collecting and analyzing data, and identifying and implementing process improvement measures (155). CQI involves continuing quantitative and qualitative analysis of processes (4), and health and satisfaction outcomes.

The CQI process relies on a demonstrated organizational commitment to provide quality DSME, and an ongoing effort by all organization and DSME team members to meet the needs and expectations of individuals with diabetes and other con-

Table 2—Scope of practice guidelines

American Association of Diabetes Educators and the American Nurses Association: Scope and standards of diabetes nursing, 1998

American Dietetic Association: American Dietetic Association Standards of professional practice for dietetics professionals, 1998

sumers (6,10–12,15,139,156). Quality improvement goals and objectives are consistent with the organizational goals and are based on an assessment of the DSME entity's target populations (14).

Evaluation is planned as an essential step in the provision of quality DSME to determine if DSME goals and objectives are met (157). Monitoring participant progress (medical and behavioral) and best practices are critical to the success of DSME and can be used as a basis for quality improvement (158–162). To measure outcomes effectively, data must be collected over time and data collection instruments administered on multiple occasions.

RECOMMENDATIONS FOR OVERSIGHT AND FUTURE REVIEWS

DSME is an integral part of diabetes care and, like many aspects of health care, is an evolving process. The standards provide a benchmark for quality assessment of DSME. Standards for DSME must be based on a combination of the best scientific evidence and best practice where evidence is lacking (see Table 2 for Scope of Practice Guidelines). As new research emerges, the standards will need to be revised, and translation of the research incorporated into the practice of diabetes education. With this in mind, the Task Force recommends the following:

- The National Standards should be reviewed and revised every 5 years or sooner if research findings indicate a need for significant changes to support evidenced-based practice.
- Participating organizations would share responsibility for coordination of the review process on a voluntary and mutually agreeable rotation schedule.
- All represented organizations should be charged with collecting data on structure, process, and outcomes of diabetes education during the interim 5-year period.

- Our exhaustive review of the literature reveals that behavioral and educational research is increasing; however, more outcomes research is needed in the area of educational and behavioral interventions and provider characteristics to prove that diabetes educational efforts improve outcomes. We look forward to greater efforts in behavioral and educational research (163).
- Behavioral research funding must be given greater attention by the Federal government and agencies such as American Association of Diabetes Educators, American Diabetes Association, Centers for Disease Control and Prevention, Indian Health Service, National Institutes of Health, and others.

DEFINITION OF TERMS — This list was developed by the Task Force to assist in the CQI process of revision of the standards and adapted several definitions from the Center for Health Promotion's Operational Terms & Definitions (164).

best practice — A strategy or process that has been demonstrated to solve a problem, improve results, and is replicable.

clients — All individuals affected by diabetes, including people with diabetes, family members, caregivers, and significant others.

community — The social, cultural, political, and geographic environment of the DSME and its target population.

continuous quality improvement (CQI) — A cyclic series of steps designed to enhance DSME processes leading to improved patient and program outcomes. Steps include the following: identify the opportunity for improvement, collect data, analyze data, choose an approach, develop the concepts and processes, implement, evaluate and improve.

criteria — A rule or test upon which a judgment or decision can be based.

diabetes self-management education (DSME) — An interactive, collaborative, ongoing process involving the person with diabetes and the educator(s). This process includes 1) assessment of the individual's specific education needs; 2) identification of the individual's specific diabetes self-management goals; 3) education and behavioral intervention directed toward helping the individual achieve identified self-management goals; 4) evaluation of the individual's attainment of identified self-management goals (revised from *Report of*

the Task Force on the Delivery of Diabetes Self-Management Education and Medical Nutrition Therapy, Diabetes Spectrum, Vol. 12, No. 1, 1999).

educational intervention — An exchange of knowledge, tools, and practices that will address the client's assessed DSME needs.

evaluation — The act of examining DSME processes and outcomes to ascertain whether the desired goals and objectives were achieved.

evidence-based — Data or expert opinion which serves as proof or testimony.

expert opinion — Beliefs expressed by individual(s) who have mastered the content of a specific area.

health professional — An individual with a license/certification/registration in a health-related field, college degree.

instructional staff — Multidisciplinary and multifaceted, experienced, skilled health professionals who work with the client in the process of DSME.

medical nutrition therapy — See *J Am Diet Assoc* 94:838–839, 1994 (Identifying patients at risk: ADA's definition for screening and nutrition assessment).

multidisciplinary — More than one discipline.

paraprofessional — Community members who serve as connectors between health care consumers and providers to promote health among groups that have traditionally lacked access to adequate care.

participant — Person with diabetes and/or family and significant other.

services — Those systems, which are derived through clear objectives and goals that arise from the definitions of function and mission. Accomplishments and performance deal systematically with priorities, measurements, feedback, organized audit of objectives, and results.

stakeholder — A person who has a vested interest (gains or losses) in what will be learned from an evaluation and how that knowledge will be utilized. Includes individuals in program operation; those served.

standard — A delineation of acceptable levels of practice consisting of qualitative or quantitative parameters utilized in evaluation.

target population(s) — A group of individuals who meet defined specifications (e.g., age, sex, race/ethnicity, income, type of diabetes, health status, geographic location, etc.) to whom DSME activities are offered.

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