POSITION STATEMENT

Diabetes Self-management Education and Support in Type 2 Diabetes: A Joint Position Statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics

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Diabetes is a chronic disease that requires a person with diabetes to make a multitude of daily self-management decisions and to perform complex care activities. Diabetes self-management education and support (DSME/S) provides the foundation to help people with diabetes to navigate these decisions and activities and has been shown to improve health outcomes (1–7). Diabetes self-management education (DSME) is the process of facilitating the knowledge, skill, and ability necessary for diabetes self-care. Diabetes self-management support (DSMS) refers to the support that is required for implementing and sustaining coping skills and behaviors needed to self-manage on an ongoing basis. (See further definitions in Table 1.) Although different members of the health care team and community can contribute to this process, it is important for health care providers and their practice settings to have the resources and a systematic referral process to ensure that patients with type 2 diabetes receive both DSME and DSMS in a consistent manner. The initial DSME is typically provided by a health professional, whereas ongoing support can be provided by personnel within a practice and a variety of community-based resources. DSME/S programs are designed to address the patient's health beliefs, cultural needs, current knowledge, physical limitations, emotional concerns, family support, financial status, medical history, health literacy, numeracy, and other factors that influence each person's ability to meet the challenges of self-management.

It is the position of the American Diabetes Association (ADA) that all individuals with diabetes receive DSME/S at diagnosis and as needed thereafter (8). This position statement focuses on the particular needs of individuals with type 2 diabetes. The needs will be similar to those of people with other types of diabetes (type 1 diabetes, prediabetes, and gestational diabetes mellitus); however, the research and examples referred to in this article focus on type 2 diabetes. The goals of the position statement are ultimately to improve the patient experience of care and education, to improve the health of individuals and populations, and to reduce diabetes-associated per capita health care costs (9). The use of the diabetes education algorithm presented in this position statement defines when, what, and how DSME/S should be provided for adults with type 2 diabetes.

BENEFITS ASSOCIATED WITH DSME/S

DSME/S has been shown to be cost-effective by reducing hospital admissions and readmissions (10–12), as well as estimated lifetime health care costs related to a lower risk for complications (13). Given that the cost of diabetes in the U.S. in 2012 was reported to be $245 billion (14), DSME/S offers an opportunity to decrease these costs (11,12). It has been projected that one in three individuals will develop

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Table 1—Key definitions

DSME (35)
• The ongoing process of facilitating the knowledge, skill, and ability necessary for diabetes self-care.
• This process incorporates the needs, goals, and life experiences of the person with diabetes or prediabetes and is guided by evidence-based research.
• The overall objectives of DSME are to support informed decision making, self-care behaviors, problem solving, and active collaboration with the health care team and to improve clinical outcomes, health status, and quality of life.
Note: CMS uses the term "training" instead of "education" when defining the reimbursable benefit (DSMT); the authors of this position statement use the term "education" (DSME) as reflected in the National Standards. In the context of this article, the terms have the same meaning.
Ongoing DSMS (35)
• Activities that assist the person with diabetes in implementing and sustaining the behaviors needed to manage his or her condition on an ongoing basis.
• The type of support provided can be behavioral, educational, psychosocial, or clinical.
Patient-centered care (69)
• Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
Shared decision making
• Eliciting patient perspectives and priorities and presenting options and information so patients can participate more actively in care. Shared decision making is a key component of patient-centered care (43,77) and has been shown to improve clinical, psychosocial, and behavioral outcomes (78).
Diabetes-related distress (29,61)
• This refers to the negative emotional responses (overwhelmed, hopeless, and helpless) and perceived burden related to diabetes.
CDE (79)
• A health professional who has completed a minimum number of hours in clinical diabetes practice, passed the Certification Examination for Diabetes Educators (administered by the National Certification Board for Diabetes Educators [NCBDE]), and has responsibilities that include the direct provision of diabetes education.
BC-ADM (80)
• A health care professional who has completed a minimum number of hours in advanced diabetes management, holds a graduate degree, passed the BC-ADM certification exam (administered by the AADE), and has responsibilities of an increased complexity of decision making related to diabetes management and education.

type 2 diabetes by 2050 (15). The U.S. health care system will be unable to afford the costs of care unless incidence rates and diabetes-related complications are reduced.

DSME/S improves hemoglobin A_{1c} (HbA_{1c}) by as much as 1% in people with type 2 diabetes (3,7,16–20). Besides this important reduction, DSME has a positive effect on other clinical, psychosocial, and behavioral aspects of diabetes. DSME/S is reported to reduce the onset and/or advancement of diabetes complications (21,22), to improve quality of life (19,23–26) and lifestyle behaviors such as having a more healthful eating pattern and engaging in regular physical activity (27), to enhance self-efficacy and empowerment (28), to increase healthy coping (29), and to decrease the presence of diabetes-related distress (16,30) and depression (31,32). These improvements clearly reaffirm the importance and value-added benefit of DSME. In addition, better outcomes have been shown to be associated with the amount of time spent with a diabetes educator (3,4,7,11).

This position statement arms health care teams with the information required to better understand the educational process and expectations for DSME and DSMS and their integration into routine care. The ultimate goal of the process is a more engaged and informed patient (33). It is recommended that all health care providers and/or systems develop processes to guarantee that all patients with type 2 diabetes receive DSME/S services and ensure that adequate resources are available in their respective communities to support these services.

PROVIDING DIABETES EDUCATION AND SUPPORT

Historically, DSME/S has been provided through a formal program where patients and family members participate in an outpatient service conducted at a hospital/health facility. In keeping with evolving health care delivery systems and in meeting the needs of primary care, DSME/S is now being incorporated into office practices, medical homes, and accountable care organizations. Receiving DSME/S in alternative and convenient settings, such as community health centers and pharmacies, and through technology-based programs is becoming more available and affords increased access.

Regardless of the setting, communicating the information and supporting skills that are necessary to promote effective coping and self-management required for day-to-day living with diabetes necessitate a personalized and comprehensive approach. Effective delivery involves experts in educational, clinical, psychosocial, and behavioral diabetes care (34,35). Clear communication and effective collaboration among the health care team that includes a provider, an educator, and a person with diabetes are critical to ensure that goals are clear, that progress toward goals is being made, and that appropriate interventions (educational, psychosocial, medical, and/or behavioral) are being used. A patient-centered approach to DSME/S at diagnosis provides the foundation for current and future needs. Ongoing DSME/S can help the

person to overcome barriers and to cope with the ongoing demands in order to facilitate changes during the course of treatment and life transitions.

REIMBURSEMENT, NATIONAL STANDARDS, AND REFERRAL

Reimbursement for DSME/S is available from the Centers for Medicare and Medicaid Services (CMS) and many private payers. Additional discipline-specific counseling, such as medical nutrition therapy (MNT) provided by a registered dietitian nutritionist, medication therapy management delivered by pharmacists, and psychosocial counseling offered by mental health professionals, is also reimbursed through CMS and/or third-party payers (35,36).

In order to be eligible for DSME/S reimbursement, DSME/S programs must be recognized or accredited by a CMS-designated national accreditation organization (NAO). Current NAOs are the ADA and the American Association of Diabetes Educators (AADE). Both bodies assess the quality of programs using criteria established by the National Standards for DSME/S (Table 2) (35). Currently, CMS reimburses for 10 program hours of initial diabetes education and 2 hours in each subsequent year. Referrals for DSME/S must be made by a health care provider and include specified indicators, such as diabetes type, treatment plan, and reason for referral. Sample referral forms with information needed for reimbursement are available on the ADA Web site (http://professional.diabetes.org/Recognition.aspx?typ=15&cid=93574) and the AADE Web site (http://www.diabeteseducator.org/export/sites/aade/_resources/pdf/general/Diabetes_Services_Order_Form_v4.pdf).

According to the National Standards for DSME/S, at least one instructor responsible for designing and planning DSME/S must be a nurse, dietitian, pharmacist, or other trained or credentialed health professional (a certified diabetes educator [CDE] or health care professional with Board Certified-Advanced Diabetes Management [BC-ADM] certification) (Table 1) who meets specific competency and continuing education requirements (35). This person is considered the primary instructor. Others can contribute to DSME and provide support with appropriate training and supervision. Trained community health workers, practice-based care managers, peers, and other support persons (e.g., family members, social workers, and mental health counselors) have a role in helping to sustain the benefits gained from DSME (37–41). Such staff/resources can be especially helpful in areas with diverse populations and serve as cultural navigators in health care systems and as liaisons to the community.

As an alternative to a referral to a formal DSME/S program, office-based health care teams can explore partnerships with educators within their community or assume responsibility for providing and/or coordinating some or all of the patient's diabetes education and support needs. Although this approach requires knowledge, time, and resources to effectively provide education, it offers a unique opportunity to reach patients at the point of care. This position statement and the National Standards for DSME/S are designed to serve as a resource for the health care team. Although reimbursement for education services is somewhat limited, financial benefits can be realized when an office-based program contributes to improved practice processes and patients' achievement of outcomes that can influence mandated quality measures.

DIABETES EDUCATION ALGORITHM

The diabetes education algorithm provides an evidence-based visual depiction of when to identify and refer individuals with type 2 diabetes to DSME/S (Figs. 1 and 2) (figures are also available as a slide set at professional.diabetes.org/dsmeslides). The algorithm defines four critical time points for delivery and key information on the self-management skills that are necessary at each of these critical periods. The diabetes education algorithm can be used by health care systems, staff, or teams, as well as individuals with diabetes, to guide when and how to refer to and deliver/receive diabetes education.

Table 2—National Standards for DSME/S: 10 standards

1. **Internal structure.** The organizational structure or system that supports self-management education; necessary for sustainability and ongoing self-management education and support.
2. **External input.** Ensures that providers of DSME will seek input from external stakeholders and experts to promote program quality.
3. **Access.** A system of assuring periodic reassessment of the population or community receiving self-management education to ensure that identified barriers to education are addressed.
4. **Program coordination.** The designation of an individual with responsibility for coordinating all aspects of self-management education (even if that person is the solo instructor).
5. **Instructional staff.** Identifies who can participate in the delivery of self-management education, recognizing the unique skill set of all potential providers of self-management education.
6. **Curriculum.** A set of written guidelines, including topics, methods, and tools to facilitate education for all people with diabetes; exactly what is taught will be based on patient's needs, preferences, and readiness.
7. **Individualization.** Instructor(s) will assess the patient to determine an individualized education and support plan focused on behavior change.
8. **Ongoing support.** A follow-up plan for ongoing support will be developed by the patient and instructor; communication among the team regarding goals, outcomes, and ongoing needs is essential.
9. **Participant progress.** Ongoing measurement of patient self-efficacy and success in self-management and achievement of goals; designed to continually assess needed support.
10. **Quality improvement.** Incorporation of systems to continuously look for ways to evaluate DSME/S effectiveness and to identify areas for improvement.

Adapted with permission from Haas et al. (35).

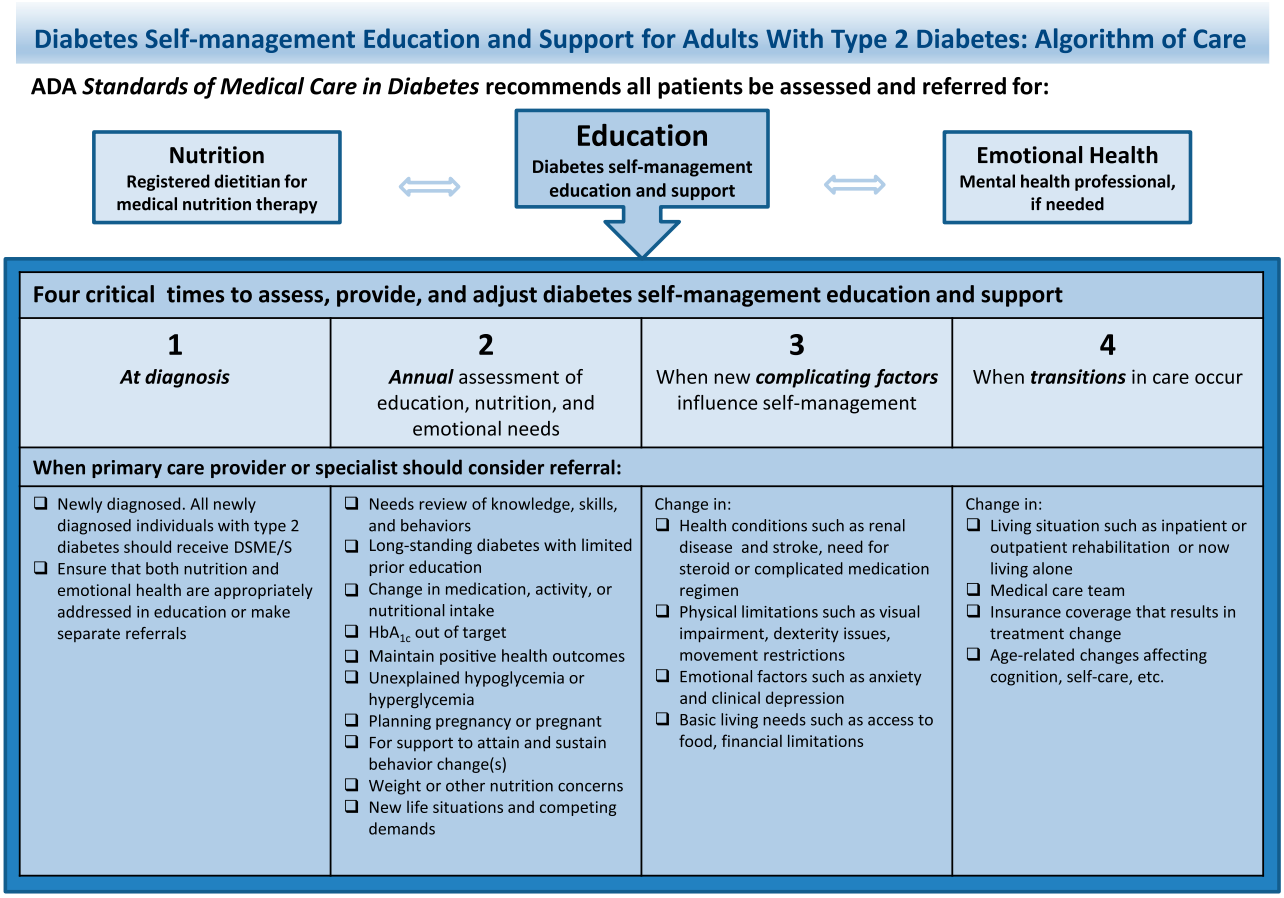

Figure 1—DSME and DSMS algorithm of care.

Guiding Principles and Patient-Centered Care

The algorithm relies on five guiding principles and represents how DSME/S should be provided through patient engagement, information sharing, psychosocial and behavioral support, integration with other therapies, and coordinated care (Table 3). Associated with each principle are key elements that offer specific suggestions regarding interactions with the patient and topics to address at diabetes-related clinical and educational encounters (Table 3).

Helping people with diabetes to learn and apply knowledge, skills, and behavioral, problem-solving, and coping strategies requires a delicate balance of many factors. There is an interplay between the individual and the context in which he or she lives, such as clinical status, culture, values, family, and social and community environment. The behaviors involved in DSME/S are dynamic and multidimensional (42). In a patient-centered approach, collaboration and effective communication are considered the route to patient engagement (43–45). This approach includes eliciting emotions, perceptions, and knowledge through active and reflective listening; asking open-ended questions; exploring the desire to learn or change; and supporting self-efficacy (44). Through this approach, patients are better able to explore options, choose their own course of action, and feel empowered to make informed self-management decisions (45,46). Table 4 provides a list of patient-centered assessment questions that can be used at diagnosis and at other encounters to guide the education and ongoing support process.

Critical Times to Provide Diabetes Education and Support

There are four critical times to assess, provide, and adjust DSME/S (47): *1*) with a new diagnosis of type 2 diabetes, *2*) annually for health maintenance and prevention of complications, *3*) when new complicating factors influence self-management, and *4*) when transitions in care occur (Figs. 1 and 2). Although four distinct time-related opportunities are listed, it is important to recognize that type 2 diabetes is a chronic condition and situations can arise at any time that require additional attention to self-management needs. Whereas patient's needs are continuous (Fig. 1), these four critical times demand assessment and, if needed, intensified reeducation and self-management planning and support.

The AADE7 Self-Care Behaviors provide a framework for identifying topics to include at each time: healthy eating, being active, monitoring, taking medication, problem solving, reducing risks, and healthy coping. The educational content listed in each box in Fig. 2 is not intended to be all-inclusive, as specific needs will depend on the patient. However, these topics can guide the educational assessment and plan. Mastery of skills and behaviors takes practice and experience. Often a series of ongoing education and support visits are necessary to provide the time for a patient to practice new skills and behaviors and to form habits that support self-management goals.

1. New Diagnosis of Diabetes

The diagnosis of diabetes is often overwhelming (48). The emotional response to the diagnosis can be a significant barrier for education and self-management.

Diabetes Self-management Education and Support Algorithm: Action Steps

Four critical times to assess, provide, and adjust diabetes self-management education and support

At diagnosis	***Annual*** assessment of education, nutrition, and emotional needs	When new ***complicating factors*** influence self-management	When ***transitions*** in care occur
Primary care provider/endocrinologist/clinical care team: areas of focus and action steps			
❑ Answer questions and provide emotional support regarding diagnosis ❑ Provide overview of treatment and treatment goals ❑ Teach survival skills to address immediate requirements (safe use of medication, hypoglycemia treatment if needed, introduction of eating guidelines) ❑ Identify and discuss resources for education and ongoing support ❑ Make referral for DSME/S and MNT	❑ Assess all areas of self-management ❑ Review problem-solving skills ❑ Identify strengths and challenges of living with diabetes	❑ Identify presence of factors that affect diabetes self-management and attain treatment and behavioral goals ❑ Discuss effect of complications and successes with treatment and self-management	❑ Develop diabetes transition plan ❑ Communicate transition plan to new health care team members ❑ Establish DSME/S regular follow-up care
Diabetes education: areas of focus and action steps			
Assess cultural influences, health beliefs, current knowledge, physical limitations, family support, financial status, medical history, literacy, numeracy to determine content to provide and how: ❑ Medications—choices, action, titration, side effects ❑ Monitoring blood glucose—when to test, interpreting and using glucose pattern management for feedback ❑ Physical activity—safety, short-term vs. long-term goals/recommendations ❑ Preventing, detecting, and treating acute and chronic complications ❑ Nutrition—food plan, planning meals, purchasing food, preparing meals, portioning food ❑ Risk reduction—smoking cessation, foot care ❑ Developing personal strategies to address psychosocial issues and concerns ❑ Developing personal strategies to promote health and behavior change	❑ Review and reinforce treatment goals and self-management needs ❑ Emphasize preventing complications and promoting quality of life ❑ Discuss how to adapt diabetes treatment and self-management to new life situations and competing demands ❑ Support efforts to sustain initial behavior changes and cope with the ongoing burden of diabetes	❑ Provide support for the provision of self-care skills in an effort to delay progression of the disease and prevent new complications ❑ Provide/refer for emotional support for diabetes-related distress and depression ❑ Develop and support personal strategies for behavior change and healthy coping ❑ Develop personal strategies to accommodate sensory or physical limitation(s), adapting to new self-management demands, and promote health and behavior change	❑ Identify needed adaptions in diabetes self-management ❑ Provide support for independent self-management skills and self-efficacy ❑ Identify level of significant other involvement and facilitate education and support ❑ Assist with facing challenges affecting usual level of activity, ability to function, health beliefs, and feelings of well-being ❑ Maximize quality of life and emotional support for the patient (and family members) ❑ Provide education for others now involved in care ❑ Establish communication and follow-up plans with the provider, family, and others

Figure 2—Content for DSME and DSMS at four critical time points.

Education at diagnosis should focus on safety concerns (some refer to this as survival-level education) and "what do I need to do once I leave the doctor's office or hospital." To begin the process of coping with the diagnosis and incorporating self-management into daily life, a diabetes educator or someone on the care team should work closely with the individual and his or her family members to answer immediate questions, to address initial concerns, and to provide support and referrals to needed resources.

At diagnosis, important messages should be communicated that include acknowledgment that all types of diabetes need to be taken seriously, complications are not inevitable, and a range of emotional responses is common. Educators should also emphasize the importance of involving family members and/or significant others and of ongoing education and support. The patient should understand that treatment will change over time as type 2 diabetes progresses and that changes in therapy do not mean that the patient has failed. Finally, type 2 diabetes is largely self-managed and DSME and DSMS involve trial and error. The task of self-management is not easy, yet worth the effort (49).

Other diabetes education topics that are typically covered during the visits at the time of diagnosis are treatment targets, psychosocial concerns, behavior change strategies (e.g., self-directed goal setting), taking medications, purchasing food, planning meals, identifying portion sizes, physical activity, checking blood glucose, and using results for pattern management.

At diagnosis of type 2 diabetes, education needs to be tailored to the individual and his or her treatment plan. At a minimum, plans for nutrition therapy and physical activity need to be addressed. Based on the patient's medication and monitoring recommendations, themes such as hypoglycemia identification and treatment, interpreting glucose results, risk reduction, etc. may need to be considered. Patients are supported when personalized education and self-management plans are developed in collaboration with the patients and their primary care provider. Depending on the qualifications of the diabetes educator or staff member facilitating these steps, additional referrals to a registered dietitian nutritionist for MNT, mental health provider, or other specialist may be needed.

Individuals requiring insulin should receive additional education so that the insulin regimen can be coordinated with the patient's eating pattern and physical activity habits (50,51). Patients presenting at the time of diagnosis with diabetes-related complications or other health issues may need additional or reprioritized education to meet specific needs.

2. Annual Assessment of Education, Nutrition, and Emotional Needs

The health care team and others can help to promote the adoption and

Table 3—Guiding principles and key elements of initial and ongoing DSME/S (45,58,81)

Engagement. Provide DSME/S and care that reflects person's life, preferences, priorities, culture, experiences, and capacity.
• Solicit and respond to questions
• Focus on decisions, reasons for the decisions, and results
• Ask about strengths and challenges
• Use shared decision making and principles of patient-centered care to guide each visit
• Engage the patient in a dialogue about current self-management successes, concerns, and struggles
• Engage the patient in a dialogue about therapy and changes in treatment
• Remain "solution neutral" and support patient identifying solution(s)
• Provide support and education to patient's family and caregiver
Information sharing. Determine what the patient needs to make decisions about daily self-management.
• Discuss that DSME/S is an important and essential part of diabetes management
• Describe that DSME/S is needed throughout the life cycle and is on a continuum from prediabetes, newly diagnosed diabetes, health maintenance/follow-up, early to late diabetes complications, and transitions in care related to changes in health status and developmental or life changes
• Avoid being didactic
• Provide "need-to-know" information and avoid providing the encyclopedia on diabetes
• Review that diabetes treatment will change over time
• Provide information to the patient using the above engagement key elements
• Take advantage of "teachable moments" to provide information specific to the patient's care and treatment
• Assess DSME/S patient/family needs for the behavioral and psychosocial aspects of informed decision making
Psychosocial and behavioral support. Address the psychosocial and behavioral aspects of diabetes.
• Assess and address emotional and psychosocial concerns, such as diabetes-related distress and depression
• Present that diabetes-related distress and a range of emotions are common and that stress can raise blood glucose and blood pressure levels
• Discuss that diabetes self-management is challenging but worth the effort
• Support self-efficacy and self-confidence in self-management decisions and abilities
• Support action by the patient to identify self-management problems and develop strategies to solve those problems, including self-selected behavioral goal setting
• Note that it takes about 2–8 months to change a habit/learn/apply behavior
• Address the whole person
• Include family members and/or support system in the educational and ongoing support process
• Refer to community, online, and other resources
Integration with other therapies. Ensure integration and referrals with and for other therapies.
• Ensure access to ongoing MNT
• Recommend additional referrals as needed for behavioral therapy, medication management, physical therapy, etc.
• Address factors that limit the application of diabetes self-management activities
• Advocate for easy access to social services programs that address basic life needs and financial resources
• Identify resources and services that support the implementation of therapies in health care and community settings
Coordination of care across specialty care, facility-based care, and community organizations. Ensure collaborative care and coordination with treatment goals.
• Understand primary care provider and specialist's treatment targets
• Provide overview of DSME/S to referring providers
• Follow medication adjustment protocols or make necessary recommendation to primary care provider
• Correspond with referring provider about education plan, progress toward treatment goals, and needs to coordinate education and support from entire clinical team; ensure documentation in the health record
• Ensure provision of culturally appropriate care
• Use evidence-based decision support
• Use performance data to identify opportunities for improvement

maintenance of new diabetes management tasks (52), yet sustaining these behaviors is frequently difficult. Thus, annual assessments of knowledge, skills, and behaviors are necessary for those who do meet the goals as well as for those who do not.

Annual visits for diabetes education are recommended to assess all areas of self-management, to review behavior change and coping strategies and problem-solving skills, to identify strengths and challenges of living with diabetes, and to make adjustments in therapy (35,52). The primary care provider or clinical team can conduct this review and refer to a DSME/S program as indicated. More frequent DSME/S visits may be needed when the patient is starting a new diabetes medication or experiencing unexplained hypoglycemia or hyperglycemia,

Table 4—Sample questions to guide a patient-centered assessment (82)

- How is diabetes affecting your daily life and that of your family?
- What questions do you have?
- What is the hardest part right now about your diabetes, causing you the most concern or most worrisome to you about your diabetes?
- How can we best help you?
- What is one thing you are doing or can do to better manage your diabetes?

goals and targets are not being met, clinical indicators are worsening, and there is a need to provide preconception planning. Importantly, the educator is charged with communicating the revised plan to the referring provider.

Family members are an underutilized resource for ongoing support and often struggle with how to best provide this help (53,54). Including family members in the DSME/S process on at least an annual basis can help to facilitate their positive involvement (55–57).

Since the patient has now experienced living with diabetes, it is important to begin each maintenance visit by asking the patient about successes he or she has had and any concerns, struggles, and questions. The focus of each session should be on patient decisions and issues—what choices has the patient made, why has the patient made those choices, and if those decisions are helping the patient to attain his or her goals—*not* on perceived adherence to recommendations. Instead, it is important for the patient/family members to determine their clinical, psychosocial, and behavioral goals and to create realistic action plans to achieve those goals. Through shared decision making, the plan is adjusted as needed in collaboration with the patient. To help to reinforce plans made at the visit and support ongoing self-management, the patient should be asked at the close of a visit to "teach-back" what was discussed during the session and to identify one specific behavior to target or prioritize (58).

3. Diabetes-Related Complications and Other Factors Influencing Self-management

The identification of diabetes complications or other patient factors that may influence self-management should be considered a critical indicator for diabetes education that requires immediate attention and adequate resources. During routine medical care, the provider may identify factors that influence treatment and the associated self-management plan. These factors may include the patient's ability to manage and cope with diabetes complications, other health conditions, medications, physical limitations, emotional needs, and basic living needs. These factors may be identified at the initial diabetes encounter or may arise at any time. Such patient factors influence the clinical, psychosocial, and behavioral aspects of diabetes care.

The diagnosis of additional health conditions and the potential need for additional medications can complicate self-management for the patient. Diabetes education can address the integration of multiple medical conditions into overall care with a focus on maintaining or appropriately adjusting medication, eating plan, and physical activity levels to maximize outcomes and quality of life. In addition to the introduction of new self-care skills, effective coping, defined as a positive attitude toward diabetes and self-management, positive relationships with others, and quality of life, can be addressed in DSME/S (29). Additional and focused emotional support may be needed for anxiety, stress, and diabetes-related distress and/or depression.

Diabetes-related health conditions can cause physical limitations, such as visual impairment, dexterity issues, and physical activity restrictions. Diabetes educators can help patients to manage limitations through education and various support resources. For example, educators can help patients to access large-print or talking glucose meters that benefit those with visual impairments and specialized aids for insulin users that can help those with visual and/or dexterity limitations.

Psychosocial and emotional factors have many contributors and include diabetes-related distress, life stresses, anxiety, and depression. In fact, these factors are often considered complications of diabetes and result in poorer diabetes outcomes (59,60). Diabetes-related distress (see definition in Table 1) is particularly common, with prevalence rates of 18% to 35% and an 18-month incidence of 38% to 48% (61). It has a greater impact on behavioral and metabolic outcomes than does depression (61). Diabetes-related distress is responsive to intervention, including DSME/S and focused attention (30). Although the National Standards for DSME/S include the development of strategies to address psychosocial issues and concerns (35), additional mental health resources are generally required to address severe diabetes-related distress, clinical depression, and anxiety.

Social factors, including difficulty paying for food, medications, monitoring and other supplies, medical care, housing, or utilities, negatively affect metabolic control and increase resource use (62). When basic living needs are not met, diabetes self-management becomes increasingly difficult. Basic living needs include food security, adequate housing, safe environment, and access to medications and health care. Education staff can address such issues, provide information about available resources, and collaborate with the patient to create a self-management plan that reflects these challenges.

If complicating factors are present during initial education or a maintenance session, the DSME/S educators can either directly address these factors or arrange for additional resources. However, complicating factors may arise at any time; providers should be prepared to promptly refer patients who develop complications or other issues for diabetes education and ongoing support.

4. Transitional Care and Changes in Health Status

Throughout the life span, changes in age, health status, living situation, or health insurance coverage may require a reevaluation of the diabetes care goals and self-management needs. Critical transition periods include transitioning into adulthood, hospitalization, and moving into an assisted living facility, skilled nursing facility, correctional facility, or rehabilitation center.

DSME/S affords important benefits to patients during a life transition. Providing input into the development of practical and realistic self-management and treatment plans can be an effective asset for successful navigation of changing situations. A written plan prepared in collaboration with diabetes educators, the patient, family members, and caregivers to identify deficits, concerns, resources, and strengths can help to promote a successful transition. The plan should include personalized diabetes treatment targets; a medical, educational, and psychosocial history; hypo- and hyperglycemia risk factors; nutritional needs; resources for additional support; and emotional considerations (63,64).

The health care provider can make a referral to a diabetes educator to develop or provide input to the transition plan, provide education, and support successful transitions. The goal is to minimize disruptions in therapy during the transition, while addressing clinical, psychosocial, and behavioral needs.

MNT AS AN ADJUNCT TO DSME/S PROGRAMS

The National Standards for DSME/S list "incorporating nutritional management into lifestyle" as one of nine core topics in a comprehensive program (35). Some DSME/S programs include MNT services delivered by a registered dietitian nutritionist, whereas other programs provide basic nutrition guidance and rely on referrals for MNT. DSME/S referral forms often include referral for MNT to help to coordinate care (ADA and AADE referral forms). The ADA publishes nutrition recommendations that detail nutrition therapy goals and nutrition and eating pattern recommendations (65). All members of the health care team should be versed in the basic principles of diabetes nutrition therapy so that they can facilitate basic meal planning, clarify misconceptions, and/or provide reinforcement of the nutrition plan developed collaboratively by the registered dietitian nutritionist and the patient (Table 5).

OVERCOMING BARRIERS THAT LIMIT ACCESS AND RECEIPT OF DSME/S

The number of people with type 2 diabetes who receive DSME/S, despite its proven benefits, is low. For example, only 6.8% of individuals with newly diagnosed type 2 diabetes with private health insurance participated in DSME/S within 12 months of diagnosis (66). Furthermore, only 4% of Medicare participants received DSME/S and/or MNT (4). To increase the number of individuals with diabetes who receive DSME/S services described in this position statement, it is necessary to consider the barriers that currently limit provision. Barriers are associated with a number of factors including the health system, the individual health care professional, community resources, and the individual with diabetes. Barriers can include a misunderstanding of the necessity and effectiveness of DSME/S, confusion regarding when and how to make referrals, lack of access to DSME/S services, and patient psychosocial and behavioral factors (67). Provider misconceptions that can limit access to DSME/S include a misunderstanding of reimbursement issues and the misconception that one or a few initial education visits are adequate to provide patients with the skills needed for lifelong self-management. Lack of or poor reimbursement for DSME/S also can hamper patients' participation. Even when DSME/S programs are operating at peak service, they often struggle to cover costs—making it easy to eliminate programs despite their wider influence on

Table 5—Overview of MNT

MNT is an evidence-based application of the nutrition care process provided by the registered dietitian nutritionist. It includes an individualized nutrition assessment, nutrition diagnosis, intervention and monitoring, and evaluation and is the legal definition of nutrition counseling by a registered dietitian nutritionist practicing in the U.S. (8).
1. Characteristics of MNT reducing HbA_{1c} by 0.5–2% for type 2 diabetes:
• Series of three to four encounters with a registered dietitian nutritionist lasting from 45 to 90 min; the registered dietitian nutritionist should determine if additional encounters are needed
• Series of encounters should begin at diagnosis of diabetes or at first referral to a registered dietitian nutritionist for MNT for diabetes and should be completed within 3–6 months
• At least one follow-up encounter is recommended annually to reinforce lifestyle changes and to evaluate and monitor outcomes that indicate the need for changes in MNT or medication(s)
2. MNT provides nutrition assessment, nutrition diagnosis, and an intervention and management plan including the creation of individualized food plan and support for the following:
• Individualized modification of food plan/physical activity/medication dosing for improved postprandial control, hypoglycemia prevention, and overall glycemic improvement
• Individualized modification of carbohydrate, protein, fat, and sodium intake and guidance to achieve lipid and blood pressure goals
• Individualized weight management planning and coaching
• Education and support on additional topics to promote flexibility in meal planning, food purchasing/preparation, recipe modification, and eating away from home
• Individualized modification of food plan for managing related complications and comorbidities such as celiac disease, gastroparesis, eating disorders/disordered eating, kidney disease, etc.
3. CMS reimburses for diabetes MNT when provided by a qualified practitioner (i.e., registered dietitian nutritionist). Many other payers also provide reimbursement. MNT services are included on the ADA and AADE DSME/S referral forms. A separate MNT referral form is available from the Academy of Nutrition and Dietetics at http://www.eatrightpro.org/~/media/eatrightpro%20files/about%20us/what%20is%20an%20rdn%20and%20dtr/mnt_referral_form_15_jul_14.ashx.

Note: The Academy of Nutrition and Dietetics recognizes the use of registered dietitian (RD) and registered dietitian nutritionist (RDN). RD and RDN can only be used by those credentialed by the Commission on Dietetic Registration.

reducing costs and improving health outcomes (13).

Although people with diabetes report wanting to be actively engaged in their health care, most indicate that they are not actively engaged by their providers and that education and psychological services are not readily available (68). In order to enhance patient and family engagement in DSME/S, provider communication about the necessity of self-management to achieve treatment and quality-of-life goals and the essential nature of both DSME and ongoing support throughout a lifetime of diabetes is essential (Table 3).

Removing barriers to access and increasing quality care can be achieved by using data to coordinate care and build workforce capacity (69). The U.S. health care paradigm is changing with increased attention on primary care practices, technology, and quality measures (70).

Studies have shown that implementing DSME programs that directly connect with primary care and rely on technology is effective in improving clinical, psychosocial, and behavioral outcomes (16,71–74). Patients receiving care in these practice settings report more confidence in provider communication and satisfaction with direct access to an educator for information and ongoing support (16).

Despite the proven value and effectiveness of diabetes education and support services, one of the biggest looming threats to their success is low utilization, which has recently forced many such programs to close. The current reimbursement model and mandate for provider referrals will continue to be limiting factors for access to and participation in DSME/S. The health care community needs processes that support referrals and reimbursement practices, otherwise it will be increasingly more difficult to sustain DSME/S services. Attention to these challenges needs to be met to provide access particularly for areas such as rural and underserved communities.

CONCLUSION

Diabetes is a complex and burdensome disease that requires the person with diabetes to make numerous daily decisions regarding food, physical activity, and medications. It also necessitates that the person be proficient in a number of self-management skills (35,75,76). In order for people to learn the skills necessary to be effective self-managers, DSME is critical in laying the foundation with ongoing support to maintain gains made during education. Despite proven benefits and general acceptance, the numbers of patients who are referred to and receive DSME/S are disappointingly small. This position statement and algorithm provide the evidence and strategies for the provision of education and support services to all adults living with type 2 diabetes. It is imperative that the health care community, responsible for delivering quality care, mobilizes efforts to address the barriers and explores resources for DSME/S in order to meet the needs of adults living with and managing type 2 diabetes.

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