

Implementation Guide

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INTRODUCTION

Since the first edition of the *ADCES Diabetes Care and Education Curriculum* was published in 2009, diabetes education, what it encompasses, who delivers it, and how it is delivered have been affected by numerous changes.

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The scope of diabetes education has expanded to include the full range of diabetes-related cardiometabolic conditions: prediabetes, obesity, hypertension, and cardiac disorders.¹ Behavioral health and mental health are now included as critical components of the diabetes care plan.²

Technological advances, from consumer-facing apps and wearables that can track food intake and physical activity to medical devices like glucose meters, insulin pumps, and continuous glucose monitors, have increased the volume of patient-generated health data (PGHD). This PGHD can help educators and persons with diabetes refine care plans to improve clinical outcomes. At the same time, there are concerns about privacy issues, keeping current with the technologies, and managing and analyzing the amount of data available.³

In 2019, the Association of Diabetes Care & Education Specialists introduced the new title for the profession: diabetes care and education specialists. This change was a recognition of the broader spectrum of the educator's significant role on the diabetes care team: providing clinical care and self-management education, facilitating the proper use of technology, working within the larger realm of cardiometabolic conditions, and supporting the behavioral health of the person with diabetes.⁴

In response to the COVID-19 pandemic in 2020, the Centers for Medicare and Medicaid Services (CMS) adjusted the telehealth rules and requirements, expanding who can provide services and how the services are provided, as well as reimbursement rules.⁵

These are just some of the changes that affect DSMES. What hasn't changed is that "diabetes is a complex and challenging disease that requires daily self-management decisions made by the person with diabetes. Diabetes self-management education and support (DSMES) addresses the comprehensive blend of clinical, educational, psychosocial, and behavioral aspects of care needed for daily self-management and provides the foundation to help all people with diabetes navigate their daily self-care with confidence and improved outcomes."⁶

In a consensus report, the American Diabetes Association, the American Association of Diabetes Educators (now the Association of Diabetes Care & Education Specialists), the Academy of Nutrition and Dietetics, and several other organizations identified four critical points at which to provide and modify diabetes self-management education and support:⁶

1. At diagnosis
2. Annually and/or when not meeting treatment targets
3. When complicating factors develop
4. When transitions in life and care occur

Table 1 details the factors that indicate when referral for diabetes care and education and support is needed.

CURRICULUM FOUNDATION

The ADCES7 Self-Care Behaviors[®] framework provides an evidence-based model for assessment, intervention, and evaluation of individuals and populations living with diabetes and other cardiometabolic conditions.³ Using the ADCES7[®] framework, diabetes care and education specialists partner with people living with diabetes and related conditions to support informed decision making.³ Diabetes care and education specialists embrace a person-centered philosophy, incorporating a strengths-based approach and acknowledging the whole person in the context of the person's life and relationships.³

In 2019, the ADCES7[®] framework, the cornerstone of diabetes self-management education, was revised. The revision recognizes the overlapping nature of the seven behaviors, specifically the knowledge and skills to master them, the barriers associated with their mastery, and associated outcome measures (see Table 2).

Since *Healthy Coping* must begin before learning can occur, this behavior is now the central behavior, symbolizing its significance in sustainable diabetes self-management.³

TABLE 1 Factors Indicating Referral to DSMES Services Is Needed⁶

When to Provide/Modify DSMES	Factors Indicating Referral to DSMES Needed
At diagnosis	Newly diagnosed—all newly diagnosed people with type 2 diabetes should receive DSMES Ensure that both nutrition and emotional health are appropriately addressed in education or make separate referrals
Annually and/or when not meeting treatment targets	Review of knowledge, skills, and psychosocial and behavioral outcomes or factors that inhibit or facilitate achievement of treatment target and goals Long-standing diabetes with limited prior education Treatment ineffective for attaining therapeutic target Change in medication, activity, or nutritional intake or preferences Maintenance of positive clinical and quality-of-life outcomes Unexplained hypoglycemia or hyperglycemia Support to attain or sustain improved behavioral or psychosocial outcomes
When complicating factors develop	Change in: Health conditions, such as renal disease and stroke, need for steroids, or complicated medication plan Health status requiring changes in nutrition, physical activity, etc Planning pregnancy or pregnant Physical limitations such as cognitive impairment, visual impairment, dexterity issues, and movement restrictions Emotional factors such as diabetes distress, anxiety, and clinical depression Basic living needs such as access to shelter, food, health care, medicines, and financial limitations
When transitions in life and care occur	Change in: Living situation, such as inpatient or outpatient or other change in living situation (ie, living alone, with family, assisted living) Clinical care team Initiation or intensification of insulin, new devices or technology, and other treatment changes Insurance coverage that results in treatment change (ie, provider changes, changes in medication coverage) Age-related changes affecting cognition, vision, hearing, and self-management

No matter when you are providing DSMES, the new edition of the *ADCES Diabetes Care and Education Curriculum* is your go-to resource. The *Curriculum* meets requirements of the National Standards for Diabetes Self-Management and Support. The ADCES7 Self-Care Behaviors[®], the framework of this *Curriculum*, is embedded in the Standards.

Healthy Eating, Being Active, and Taking Medication often serve as the basis for care plans since they comprise what individuals with diabetes and related conditions undertake regularly as they self-manage their condition.³

Monitoring encompasses the previous four self-care behaviors. By collecting personalized data, *Monitoring* helps convert some of the intangible components of diabetes into perceptible ones. The knowledge gained and the ability to use the information from *Monitoring* can drive behavior change.³

Equally important are the less tangible self-care behaviors of *Reducing Risk* and *Problem Solving*, which greatly influence motivation, goal setting, and the ability to transform goals into action.³

TABLE 2 ADCES7 Self-Care Behaviors®

	Definition of the Behavior	Behaviors of Persons With Diabetes That Contribute to Healthier Outcomes
Healthy Coping	"A positive attitude toward diabetes and self-management, positive relationships with others, and quality of life" is critical for mastery of the other 6 behaviors.	Increase self-efficacy Address cognitive impairment Gather support
Healthy Eating	"A pattern of eating a wide variety of high quality, nutritionally dense foods in quantities that promote optimal health and wellness."	Develop and use a personalized meal plan Establish healthy eating patterns Measure portions and monitor intake Understand and use Nutrition Facts labels
Being Active	"Is inclusive of all types, durations, intensities of daily physical movement. Aerobic or resistance exercise training (structured or planned) as well as unstructured activities may benefit cardiometabolic health."	Appropriate daily movement/physical activity plan <ul style="list-style-type: none"> • Engaging in unstructured or daily living activities • Decrease amount of time sitting
Taking Medication	"Includes following the day-to-day prescribed treatment with respect to timing, dosage, and frequency, as well as continuing treatment for the prescribed duration."	Keep a current, accurate medication list and history <ul style="list-style-type: none"> • Fill the prescription • Take medication as prescribed and at the right time • Share medication beliefs and concerns
Monitoring	Problem solving	Track appropriate and accurate information <ul style="list-style-type: none"> • Maintain and share organized records • Identify trends • Be empowered and engaged through the PGHD
Reducing Risk	Refers to identifying risks and implementing behaviors to minimize and/or prevent complications or adverse outcomes.	Act early <ul style="list-style-type: none"> • Participate in DSMES and ongoing education activities • Aim for adequate sleep • Plan and carry out risk reduction activities (vaccines, tobacco cessation, and screenings, and exams) • Engage in health
Problem Solving	"Is a learned behavior that includes generating a set of potential strategies for problem resolution, selecting the most appropriate strategy, applying it and evaluating the effectiveness."	Ask for clarification and disclose challenges <ul style="list-style-type: none"> • Participate in shared decision making and collaborative goal setting • Create an environment that promotes health • Be a lifelong learner and learn from choices

Source: Adapted from C. Mensing, M. Peebles, A Focus on Behavioral Outcomes: AADE7® Revision, Association of Diabetes Care and Education webinar, March 4, 2020.

MODULE ORGANIZATION

The curriculum begins with *Introduction to Diabetes*. This introductory module focuses on the risk factors and pathophysiology of type 1 diabetes, type 2 diabetes, and prediabetes. Its purpose is to give participants a basic foundation upon which to begin learning about the self-care behaviors involved in the management or prevention of diabetes. Following this introduction is a module for each of the ADCES7 Self-Care Behaviors®. With few exceptions, the modules are structured as follows:

Association of Diabetes Care & Education Specialists®

An Educator's Overview

Systematic Review of the Literature

For each of the ADCES7 Self-Care Behaviors®, the growing body of evidence has been systematically reviewed by a team of researchers engaged by ADCES. Key points and conclusions of these reviews are outlined in this section, providing support for DSMES interventions that have been integrated into the curriculum's instructional plan.

Background Information and Instructions for the Diabetes Care and Education Specialist

Salient background information and relevant instructions prepare the diabetes care and education specialist to instruct and counsel participants about each self-care behavior. Diabetes care and education specialists are encouraged to read this section prior to using the instructional plan with participants.

Learning Objectives

Prior to instruction, an assessment should be performed. A diabetes care and education specialist's review of the assessment will reveal which areas of self-care the participant needs to learn about. When using the empowerment approach, however, the participant's interests determine which topic areas are covered and when. Since there is usually a great deal that needs to be learned, it is not realistic to assume that each participant will successfully meet every listed objective in a session. The diabetes care and education specialist and participant will need to prioritize which learning objectives can be met in each encounter. At the beginning of each module, a range of potential learning objectives is listed. These objectives are measurable statements that indicate what the participant could potentially learn if the entire instructional plan is covered.

Behavioral Objectives

Behavioral objectives are developed collaboratively between the diabetes care and education specialist and the participant *after* the instructional encounter(s). Because they are personalized, every participant's behavioral objectives will be unique, different from other participants. At the beginning of each module is a statement that the participant will set a behavioral goal for the specific self-care behavior. See Setting a SMART Goal for details on how behavioral goals are developed.

Instructional Plan

One traditional educational approach is to deliver instructional content in a lecture format, in a set order of topics, and from basic to advanced level, followed by a question and answer period. As has been learned from experience with the participant empowerment approach, this is not necessarily the most effective method for educating adults. **Addressing psychosocial concerns first stimulates participant interaction.** It shows them that the diabetes care and education specialist respects their experiences and perspectives. By focusing on the day-to-day problems in living with diabetes, the diabetes care and education specialist can then center the instruction on the participants' interests. While this approach may require diabetes care and education specialists to stretch their comfort zone and change their program structure, this practical approach enhances learning and promotes behavior change.

The diabetes care and education specialist will note that the instructional plan in this curriculum is laid out in a logical progression of information. This arrangement of content, however, is not meant to provide a static basis for lecture from start to finish within each topic area. In order for the information to be meaningful to participants, their queries should guide what content is delivered by the diabetes care and education specialist. So, even though the diabetes care and education specialist may believe that the learner "needs to know" everything in the instructional plan, participants ultimately decide what they "need to know" at that particular encounter.

Questions to ask participants are included throughout the curriculum to assess their assumptions, attitudes, beliefs, and knowledge level concerning the various aspects of self-management. Learners are actively engaged in the learning experience.

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Learners are involved in deciding on the content that will be covered. Questions at the beginning of every module serve to identify what they want to learn. Diabetes care and education specialists are directed to base teaching on participants' identified concerns.

In certain cases, participants will need some direction. They may not know what to ask because the experience of living with diabetes is so new. When participants lack the required skills and knowledge to be self-directed, the diabetes care and education specialist should provide appropriate information, then allow subsequent participant questions to drive the experience further.

Probing questions are included in each module, intended to draw upon participants' experience. Participants who have successfully overcome difficulties are invited to share with other learners in the group. It encourages the development of improved problem-solving skills because they can draw on situations they have or are likely to encounter.

This instructional plan is flexible and is suitable in group or one-to-one settings and for delivery in classroom or via telehealth. Unlike the slide lecture format, the instructional design of this curriculum lends itself especially well to DSMES delivered via telehealth. The instructor can engage in a meaningful conversation with the participant(s), using the question prompts and other features, to address their needs and concerns and answer their most pressing questions.

Instructional Plan Features

Yellow Dialog Boxes

Each module in this curriculum begins with a yellow dialog box that includes a list of questions the specialist may ask participants. Use these queries to:

- ◆ encourage active discussion
- ◆ keep learners engaged
- ◆ probe for understanding
- ◆ assess reasoning and critical thinking skills

Additional questions appear throughout the module.



How do you feel about having to take diabetes medicine?

What do you want to learn today about your medicine?

What is your greatest concern/frustration about taking medicine?

What is the hardest part about taking your medicine?

What do you think would help you take your medicine the way it's prescribed? What kind of effect do you think the medication will have on you and your baby?

Lavender Dialog Boxes

Lavender dialog boxes appear throughout most modules. These boxes include common questions the diabetes care and education specialist may anticipate from participants, followed by answers. If they are not asked by patients, the diabetes care and education specialist may choose to pose these questions to the participant(s) to enhance the learning experience.

Participant asks: *"Is it safe for a person with diabetes to have a pedicure?"*



Teaching and Learning Boxes

A variety of principles of adult learning are highlighted in teaching and learning boxes and distributed throughout the modules as reminders to the diabetes care and education specialist.



Adults learn best when the learning experience is active and not passive. **Keep participants engaged with questions like “Can you list. . . ?”**



Adults learn best when they feel valued and respected for the experiences and perspectives they bring. **Use probing questions to elicit learners’ experiences and perspectives.**

Survival Skills Tags **Survival Skill**

When faced with the prospect of teaching “survival skills,” many diabetes care and education specialists wonder where to draw the line. Opinions may vary on what topics to include in survival skills, as well the depth of instruction. Most diabetes care and education specialists agree that, at the very least, survival skills should include prevention, recognition, and treatment of hypoglycemia for at-risk persons (eg, those taking insulin or oral insulin secretagogues); recognition and treatment of hyperglycemia; how to safely take prescribed diabetes medication and recognize side effects that should be reported; healthy food choices and basic meal planning; glucose monitoring and proper care of testing supplies; target blood glucose levels; and when to call the healthcare team for help. Red survival skills tags appear throughout the curriculum to identify potential survival skills topics.

Advanced Detail

Various aspects of self-care topics are expanded upon as within the curriculum. These are to be used as needed, depending upon participants’ level of interest, the complexity of their self-care, and the specialist’s preference.

Identifying Barriers/Reality Scenarios and What Would You Do?/Problem Solving

People with diabetes face an unlimited number of barriers to successfully carrying out self-care behaviors. Each person’s barriers will differ based on their individual situation. Diabetes care and education specialists should encourage participants to identify barriers that will likely disrupt their self-care. To help activate this process, common barriers to self-care are listed in most modules, along with possible solutions. This section provides a springboard for discussion about barriers, used at the discretion of the diabetes care and education specialist. Rather than passively offering solutions to participants, however, the diabetes care and education specialist is challenged to actively engage them in the problem-solving process. The sample solutions included for each Reality Scenario may not apply or be useful for each participant. In group education sessions, invite the participants to brainstorm together and learn from each other’s experiences.

While diabetes care and education specialists are typically fascinated by diabetes as an academic subject, participants want to learn about how it will affect their lives from day to day. A certain amount of time, naturally, should be spent teaching the basic pathophysiology of diabetes, so that learners can grasp the rationale for self-care. The majority of time with learners, though, should be spent attending to the real-life issues—emotional, relational, and physical—involved in living with diabetes.

Reality Scenarios and problem-solving exercises are included in which participants are encouraged to brainstorm to determine multiple possible solutions to self-care barriers. The emphasis in the curriculum is *applying the content* to everyday life with diabetes, translating knowledge of the topic into a *behavioral action*.

Identifying Facilitators

As important as it is to identify barriers, diabetes care and education specialists often forget about the facilitators to self-care, the potential positives in the situation. This module section calls attention to the facilitators—the people, resources, and activities that can help participants adhere to their self-care plan. The diabetes care and education specialist can help them identify the people in their lives who may be supportive of their efforts, and how to maximize that support.

Setting a SMART Goal

Collaborative settings of behavior change goals (behavioral objectives) should take place after instruction. Diabetes care and education specialists are prompted to use the SMART acronym as a guide to help participants set goals. Goals should be:

- S**—Specific, not vague
- M**—Measurable (eg, how much, for how long, how often)
- A**—Attainable; challenging but not out of reach
- R**—Realistic; given the person’s situation, can it be done?
- T**—Timeline; short-term, over the next week or so

Diabetes care and education specialists may find it tempting, in the interest of time, to set goals for the participant. This approach will likely backfire, however, since it is not patient-driven. Goals should be selected based on what the participant feels is important and needed. He or she must understand what is needed to make the change in behavior, have the confidence to do it, and believe that it will lead to an improvement in his or her health or quality of life. A date should be set for follow-up in order to evaluate progress with the selected behavior change.

Documentation of behavior change goals represents standard practice and is a requirement for program accreditation. Diabetes care and education specialists can develop their own tools for documenting the setting of goals.

Follow-up/Outcomes Measurement

The process for measuring outcomes is delineated at the end of each module. These are based on the revised ADCES7 Self-Care Behaviors®. Table 3 provides the structure of the outcomes tables for each of the seven behaviors.

TABLE 3 ADCES Self-Care Behaviors® Outcomes Measurement Process

	Outcomes Measurement Process			
	Measurement/Assessment		Monitoring	Management
DSMES Core Outcome Measures (Diabetes Self-Care Behaviors)	Intermediate Outcome Learning and Barrier Resolution	Intermediate Outcome/ Behavior	Recommended Interval Between Measurement	Outcomes Information Used to Drive Decision Making and the Delivery of Care
ADCES7® Behavior	Knowledge Skills Barriers	Measures Methods of Measurement	Learning Outcomes Behavioral Outcomes	Behavior Barrier Identification Barrier Resolution Behavior Change

Source: Adapted from Association of Diabetes Care & Education Specialists, “An effective model of diabetes care: revising the AADE7 Self-Care Behaviors®,” *Diabetes Educ* 4, no. 2 (2020): 139-60.

Learning—acquiring knowledge and skills—is an immediate outcomes measure, meaning that it can be measured immediately after the education session. Additionally, learning outcomes should be measured at follow-up encounters. This provides the diabetes care and education specialist an opportunity to assess for gaps in knowledge and skills and educate accordingly.

As an intermediate outcome, behavior change requires measurement over at least 2 points in time. The status of the behavior is measured at baseline (after the education session) and again after the participant has had time to implement the new behavior.

Participant Education Materials and Practice Tools

There are participant education materials and practice tools at the end of some modules, but the majority of these resources are found on the ADCES Web site: <http://www.diabeteseducator.org>.

Included there are clinical management tools, practice tools, practice papers, and position statements as resources for people living with diabetes. These resources may be downloaded and used by instructors and shared with participants. New resources are added to the Web site throughout the year.

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