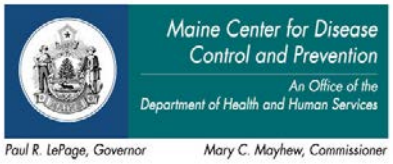
Maine Diabetes Prevention and Control Program
Division of Population Health
Maine Center for Disease Control and Prevention
Maine Department of Health and Human Services
11 State House Station
Augusta, Maine 04333-0011
207/287-5380
www.mainepublichealth.gov

Maine Diabetes Self-Management Training (DSMT)

Program Manual

2013 Edition



MAINE DIABETES SELF-MANAGEMENT TRAINING (DSMT) MANUAL 2013

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Diabetes Self-Management Training (DSMT) Program Manual

Introduction

This Manual provides guidelines for the implementation of the Maine Diabetes Self-Management Training (DSMT) Program. This diabetes self-management education program is designed to support the person with diabetes, his/her family, and the diabetes team through development of a comprehensive learning experience based on an individualized education plan and consistent with the *2013 National Standards for Diabetes Self-Management Education and Support* (Diabetes Care, January 2013).

Development of the DSMT Program Manual was supported under a Cooperative Agreement with the Centers for Disease Control and Prevention/Division of Diabetes Translation, Appropriation No. 013-10A-2640. The contents of the Manual are the sole responsibility of the Maine Diabetes Prevention and Control Program, Division of Population Health, Maine Center for Disease Control and Prevention, Department of Health and Human Services.

Diabetes Prevention and Control Program
Division of Population Health
Maine Center for Disease Control & Prevention
Department of Health & Human Services
11 State House Station
286 Water Street, 5th Floor
Augusta, ME 04333-0011
Phone: 207-287-5380

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What is ADEF?
In 1978 what was then called the Maine Diabetes Control Program (DCP) created a Diabetes Mellitus Task Force to design an outpatient diabetes education and follow-up program. This program became the Maine Model Ambulatory Diabetes Education and Follow-up Program or ADEF Program. Beginning in 1983 the Maine DCP was responsible for ensuring quality and consistency of the ADEF Program at the participating education sites. DCP staff developed and utilized the ADEF Program Manual, New Instructor Program, and ADEF Program Data Forms to assist in associated quality assurance activities. In 1996 and to the present much progress has been made. The State of Maine Legislature enacted Public Law 592 (24 MRSA AN ACT TO *Require that Diabetes Supplies and Self-Management Training Be Covered by Health Insurance Policies)*. Nationally, Diabetes Self-Management Training (DSMT) is the term used to define what ADEF started as here in Maine. In 2012 and thereafter this manual and its instruction will use the DSMT Program Manual name in order to align with the national terminology, reimbursement language, and policies related to the DSMT. For a full history of the ADEF/DSMT program see Tab 16 Appendix in this manual.

Acknowledgements

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Kathy Beers, RN, BSN, CDE – Maine Health, Clinical Integration
Kay Mullin, RD, CDE
Doreen Adams, RN, BSN, CDE – Stephens Memorial Hospital
Kay Spofford, RD, LD, CDE – Sebasticook Valley Health
Alice Willard-Michaels RN, CDE – Parkview Adventist Medical Center
Cindy Young, RN-C, CDE – Maine Medical Partners Diabetes & Endocrinology Center

Editor: Nathan Morse, CHES, TTS-C
Maine Diabetes Prevention and Control Program
Division of Population Health
Maine Center for Disease Control and Prevention
Department of Health and Human Services
Augusta, Maine 04333-0011
207-287-2907

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DSMT Program Goals and Objectives

DSMT Program Goal

The overall goal of the DSMT Program is to assist persons with diabetes to acquire the knowledge, skills, attitudes, and behaviors needed to achieve/maintain diabetes control, prevent/manage complications, and live well with diabetes.

DSMT State Certified Program

The sponsoring agency/institution (DSMT Program Site) Diabetes Self-Management Training (DSMT) Program in accordance with the Program components and site responsibilities are outlined in this DSMT Program Manual. DSMT Programs must also achieve accreditation from the American Diabetes Association (ADA) Education Recognition Program, or American Association of Diabetes Educators (AADE) Diabetes Education Accreditation Program (DEAP).

The Diabetes Prevention and Control Program (DPCP) will review site adherence to DSMT Program requirements and provide technical assistance to DSME/DSMT Programs to achieve and maintain DSMT Program and ADA or AADE Education Recognition Program status.
If any questions arise surrounding this process please call the DPCP at 207-287-5380.

The DSMT Program and the ADA Education Recognition Program are based on the *2013 National Standards for Diabetes Self-Management Education and Support*. Guidelines for achieving DSMT Program and ADA or AADE Education Recognition Program Status are the same.

DSMT Program Objectives

The objectives of the DSMT Program are to:

- Assess each person referred to the DSMT Program thoroughly and design an individualized education and follow-up plan which includes learner outcomes and patient centered behavioral goals.
- Provide appropriate education and counseling to develop self-management skills to achieve/maintain blood glucose control, prevent/manage complications, and live well with diabetes.
- Continually evaluate the effectiveness of the DSMT Program to achieve desired participant outcomes.

DSMT Program Institutional Policy

Standard 1 Internal Structure – The provider(s) of DSME will document an organizational structure, mission statement, and goals. For those providers working within a larger organization, that organization will recognize and support quality DSME as an integral component of diabetes care. Documentation of an organizational structure, mission statement, and goals can lead to efficient and effective provision of DSME and DSMS. In the business literature, case studies and case report investigations of successful management strategies emphasize the importance of clear goals and objectives, defined relationships and roles, and managerial support. Business and health policy experts and organizations emphasize written commitments, policies, support, and the importance of outcomes reporting to maintain ongoing support or commitment. Documentation of an organizational structure that delineates channels of communication and represents institutional commitment to the educational entity is critical for success. According to The Joint Commission, this type of documentation is equally important for both 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 from which to deliver quality diabetes education. In 2010, The Joint Commission published the Disease-Specific Care Certification Manual, which outlines standards and performance measurements for chronic care programs and disease management services, including "Supporting Self-Management".

Each DSMT Program site will establish a written institutional policy in which a commitment is made to the creation, delivery and maintenance of the DSMT Program at the site, health system/network or within program identified community settings. The policy will reflect the sponsoring institution's recognition and support of quality self-management education as an integral component of diabetes care.

The written institutional policy will be specific to the delivery of the DSMT Program and not to general patient education. The policy may be part of institution-wide or departmental policies, whichever is deemed more appropriate by the DSMT Program site personnel.

The written institutional policy will be established prior to an institution becoming certified as a DSMT Program site. Verification and review of the policy by the DPCP will occur prior to site personnel attending the DSMT New Instructor Program.

Subsequent diabetes prevention, treatment/control, and referral protocols will be developed within the institution to support and guide the utilization of the DSMT program and its staff as members of the health care team in an effort to support patients within the health system and the community setting.

Sample Institutional Policy Statement

This institution advocates the provision of an outpatient diabetes self-management education program as an integral component to the care of persons with pre-diabetes or diabetes. The institution will deliver the DSMT Program and provide the necessary personnel and other resources to implement a program proportional to the size of the population the program will serve.

DSMT Program Advisory/Diabetes Self-Management Support (DSMS) Committees

Standard 2 External Input – The provider(s) of DSME will seek ongoing input from external stakeholders and experts in order to promote program quality. For both individual and group providers of DSME and DSMS, external input is vital to maintaining an up-to-date, effective program. Broad participation of community stakeholders, including individuals with diabetes, health professionals, and community interest groups, will increase the program's knowledge of the local population and allow the provider to better serve the community. Often, but not always, this external input is best achieved by the establishment of a formal advisory board. The DSME and DSMS provider(s) must have a documented plan for seeking outside input and acting on it. The goal of external input and discussion in the program planning process is to foster ideas that will enhance the quality of the DSME and/or DSMS being provided, while building bridges to key stakeholders. The result is effective, dynamic DSME that is patient centered, more responsive to consumer-identified needs and the needs of the community, more culturally relevant, and more appealing to consumers.

Each DSMT Program site will have a standing Advisory/DSMS Committees that meets at least annually.

The purpose of the Committees is to involve professionals and other stakeholders in the planning and review of the DSMT Program.

The Committees will make recommendations to the DSMT Team regarding the development, implementation, and evaluation of the DSMT Program, inform its institution and/or peers about the DSMT Program, and seek direction from the institution and peers regarding the DSMT Program. The committee annually plans and evaluates the services offered and reviews participant outcomes.

The Advisory Committee will be composed, at a minimum, of the following individuals:

- Program coordinator
- Instructors that include two different people which include at least a registered dietitian (RD) and a registered nurse (RN) who have continuing education and experience in both diabetes and psychosocial and teaching skills
- Other health professionals such as behaviorist, exercise physiologist, pharmacist, physician, physical assistant, podiatrist, social worker, other RNs and RDs
- Physician advisor
- Consumer/community representative(s), like Healthy Maine Partnerships (HMPs)
- Representative of site's administration
- Other stakeholder(s) such as health professionals who are not members of the instructional team/staff
- Persons with diabetes or caretakers for people with diabetes

Sites may encourage other disciplines or representatives to participate on the Advisory/DSMS Committees in addition to the core members.

Advisory Committee activities include the following:

- Participate in development and review of the annual plan for the DSMT Program.
- Recommend educational policy for the DSMT Program.
- Assist in identifying the target population and estimated caseload served by the Program.
- Review educational materials.
- Develop or recommend evaluation strategies for the Program, including both individual and program outcomes.
- Partner with agencies, schools, businesses, and social/service clubs in the community, as appropriate, to provide activities to reduce the burden of diabetes and its associated complications.
- Perform yearly review of the Program, including target population, referral mechanisms, budget, availability, publicity, community resources, outcomes, continuous quality improvement (CQI) activities, follow-up mechanisms, and evaluation methodology.

The committee will meet at least annually. Additional committee meetings may be held during the year as necessary.

Annual Plan

There needs to be documentation that the established advisory/DSMS committees which involves professional staff and other stakeholders plans annually. The Annual Plan represents the interests of the DSMT Program and addresses community concerns. The Annual Plan is an outline that defines and strategically guides the activities of the DSMT Program for the next year. The Annual Plan includes all of the topics listed under the Annual Review.

Sites are required to send a copy of the Annual Plan to the DPCP.

If the program is less than 1 year old, there must be documentation that an initial program plan is in place with all of the topic items listed under the Annual Review and on the Annual Plan template prior to the start of the data period.

Annual Review

The Annual Review is the yearly evaluation by the advisory/DSMS system of DSMT, reflecting its role as quality overseer on the operations and performance of the DSME. The following topics must be addressed:

1. Goal achievement of DSMT operations – review status of goals and/or objectives established for the DSMT entity.
2. Data analysis of DSMT operations – analysis and review of participant access data and follow-up rates and other relevant data.
3. Mission statement of DSMT – review mission statement and appropriateness to DSMT operations.
4. Organizational structure of DSMT – review organizational structure to assess if the current structure is meeting the needs of the DSMT operations and participants.
5. Population served by DSMT – analysis of the projected target population and review of participant population data and how DSMT program is meeting the needs of the population it is serving – This must include at least the following:
    - Type of diabetes and age demographics
    - Ethnicity

- Cultural Influence
- Positive and negative issues with the target population
  - Educational levels
  - Transportation issues
  - Economic issues
  - Barriers to obtaining education

Once the target population and its issues are identified, the advisory/DSMS committees should design the program to fit the needs of this population. Every year at the annual program review, the projected target population and the actual target population must be compared, and the committees should adjust the program to meet the needs of the actual population.

6. Resources of DSMT – adequacy of resources, including personnel, budget, equipment and curriculum (Advisory/DSMS committees may not have authority over all of these topics but they must be informed about them).
7. Community concerns – a review of the entity's involvement in the community and analysis of community needs facilitated by the DSMS committee.

8. Behavioral and other outcome data measurements of DSMT participants – evaluate effectiveness of DSMT program based on behavioral goal and other outcome measurement data.

Minutes are to be recorded at each Advisory/DSMS committee meetings. Minutes of the committee meetings are to reflect the eight topics listed under Annual Review. Sample advisory/oversight committee agenda and minutes templates are provided on the following pages. Members of the committee may contribute either as part of group meetings and/or be consulted on an individual basis (e.g. ballot, surveys, phone consults, emails)

Diabetes Self-Management Support (DSMS)

Standard 8 Ongoing Support - The participant and instructor(s) will together develop a personalized follow-up plan for ongoing self-management support. The participant's outcomes and goals and the plan for ongoing self-management support will be communicated to other members of the health care team. While DSME is necessary and effective, it does not in itself guarantee a lifetime of effective diabetes self-care. Initial improvements in participants' metabolic and other outcomes have been found to diminish after approximately 6 months. To sustain the level of self-management needed to effectively manage prediabetes and diabetes over the long term, most participants need ongoing DSMS. The type of support provided can be behavioral, educational, psychosocial, or clinical. A variety of strategies are available for providing DSMS both within and outside the DSME organization. Some patients benefit from working with a nurse case manager. Case management for DSMS can include reminders about needed follow-up care and tests, medication management, education, behavioral goal setting, psychosocial support, and connection to community resources. The effectiveness of providing DSMS through disease management programs, trained peers and community health workers, community based programs, information technology, ongoing education, support groups, and medical nutrition therapy has also been established. While the primary responsibility for diabetes education belongs to the provider(s) of DSME, participants benefit by receiving reinforcement of content and behavioral goals from their entire health care team. Additionally, many patients receive DSMS through their primary care provider. Thus, communication among the team regarding the patient's educational outcomes, goals, and DSMS plan is essential to ensure that people with diabetes receive support that meets their

needs and is reinforced and consistent among the health care team members. Because self-management takes place in participants' daily lives and not in clinical or educational settings, patients will be assisted to formulate a plan to find community-based resources that may support their ongoing diabetes self-management. Ideally, DSME and DSMS providers will work with participants to identify such services and, when possible, track those that have been effective with patients, while communicating with providers of community-based resources in order to better integrate them into patients' overall care and ongoing support.

The DSMT program must have in addition to its advisory committee and Diabetes Self-Management Support (DSMS) structure that allows the DSMT program to seek ongoing external support from stakeholders, experts in order to enhance the DSMT program quality. The DSMS can consist of community agencies/partners that will support the diabetes patients after they have completed DSMT and are now living and follow their individual self-care plans outside of the health system. External support systems are essential to the success of DSMT program outcomes and embody a patient centered approach to diabetes prevention/support/care. The DSMS must have a separate Annual Plan that supports/compliments the DSMT Annual Plan and demonstrates stakeholder/expert involvement in the support for people with pre-diabetes and diabetes.

DSMT Program Budget

Each site will allocate sufficient funds to permit personnel to realistically implement the DSMT Program.

The program budget will consider all expenses associated with the delivery of the DSMT Program, including, but not limited to, staff salaries, training and continuing education, education materials, supplies, and meeting space.

It is the responsibility of the site to prepare, provide, and monitor the budget for the DSMT Program.

Enacted July 1, 1996, Maine Public Law 592 now included in (Maine Revised Statutes Title 24-A Maine Insurance Code, Chapter 33, section 2754) requires commercial health insurance carriers licensed in Maine to cover "out-patient self-management training and educational services used to treat diabetes, if provided through ambulatory diabetes education facilities authorized by the Diabetes Prevention and Control Program Maine Health and Human Services, Public Health." Medicaid, Medicare, Medicare Supplemental policies and other limited benefit health insurance policies and contracts, including companies and unions that self-fund their insurance plans, are exempt from Title 24-A Maine Insurance Code, Chapter 33, section 2754.

As of February 27, 2001, Medicare will only reimburse diabetes self-management education programs that are nationally certified as "American Diabetes Association – Education Recognition Programs, or American Association of Diabetes Educators Diabetes Education Accreditation Program or Indian Health Service Diabetes Education Recognition Program.

Reimbursement to sites delivering the DSMT Program is available as a regular benefit by the Maine Medicaid Program (*MaineCare* Program as of 01/01/02).

It is the responsibility of each DSMT Program site to pursue insurance coverage issues. The DPCP will assist any DSMT Program site in these efforts if requested to do so by site personnel.

Quality Assurance

Since the DSMT Program is reimbursed by third-party payers, the DPCP is charged by statute (Title 24-A Maine Insurance Code, Chapter 33, section 2754) with assuring the public that quality standards are met. To receive reimbursement from Medicare, program sites must achieve and maintain ADA or AADE Education Recognition Program status. Both the DSMT Program and ADA or AADE Education Recognition Programs are based on the *2013 National Standards for Diabetes Self-Management Education and Support*.

As of October 1st, 2005 All DSMT Programs are required to attain and maintain ADA or AADE Education Recognition Program status to be considered certified DSMT programs. The DPCP requires DSMT sites file with the DPCP copies of all materials supporting Education Recognition. Copies of materials sent to accreditation agencies are to be sent to the DPCP at the same time and include:

- Initial application, if a new site
- Extension applications (every three years)
- Copies of paper audit items (minutes of Annual Plan and program Annual Review meeting of the Advisory/Oversight Committee; Program Coordinator's job description and CV or resume'; formal CQI Plan; or written curriculum)
- Annual Status Report
- Interim Status Report (if required to send to ADA)

In January of each year, the DPCP will audit each site's file to assure that ADA or AADE Education Recognition Program documentation is in place from the previous year. Sites will be notified and required to submit any missing documentation from the previous year by January 31, of the current year.

If a DSMT site loses its Education Recognition Program status, DSMT Program status is lost at the same time.

The site is required to notify the DPCP of loss of Education Recognition status immediately and schedule a meeting of the DPCP staff and the Advisory/DSMS Committees within 30 days to review deficiencies, address the issues, and develop a plan to address these issues. DPCP will provide technical assistance as appropriate to reinstate DSMT Program and Education Recognition Program status. DSMT Program status will be reinstated when Education Recognition Program status is once again achieved. Exemptions will be made on a case by case basis.

On-Site Audit

It is recommended that all sites develop and maintain a binder(s) with all materials related to quality assurance to be readily accessible when any questions from ADA, AADE, DPCP or payers arise. Materials such as: Education Recognition application, annual status reports, CQI plan, Annual Plan, minutes of Advisory/DSMS committee meetings, coordinator's job description and resume', instructors' continuing education records, copies of CDE certificates, CDR cards and licenses, curriculum, participant data and outcome reports, etc. should be included in the binder(s). Should any questions arise surrounding your audit please contact the DPCP.

DSMT Letter of Understanding

The DSMT Letter of Understanding (LOU) is a formal agreement that describes the responsibilities of the program site and the DPCP in presenting the DSMT Program. The DSMT Letter of Understanding is reviewed, completed, signed and returned to the DPCP by January 31st. of each year. The Maine Department of Health and Human Services (DHHS) Commissioner will review and sign the final LOU. DPCP will scan an electronic copy for records, and return the original signed document to the institution. See DSMT Letter of Understanding in Tab 16 Appendix.

New Instructor Program (NIP) Training

The DPCP will offer the New Instructor Program (NIP) Training twice (2) per year for any institution in Maine with active/current ADA or AADE Education Recognition Program. The DPCP will email training notifications to all currently recognized DSMT program on DPCP registry *i.e.* programs who complete annual LOU. This training is a required element for DSMT program recognition with the DPCP and the Maine Bureau of Insurance. Any DSMT program staff, newly appointed or hired as a program coordinator, instructor and/or back-up instructor will be required to attend the next scheduled NIP training following their appointment/new hire date.

If any newly appointed/hired DSMT program staff attended the NIP training in the past, but have not been activity instructing DSMT for the previous two (2) years in the State of Maine, then they must attend the next scheduled NIP training following their appointment/new hire date.

The institution with active/current ADA or AADE Education Recognition Program is responsible for the NIP training program cost of $200 per/person. Registration must be completed and returned to the DPCP by/before the current deadline provided on the program registration. For any questions regarding the New Instructor Program Training please contact the DPCP.

DSMT Program Coordinator

Standard 4 Program Coordination - A coordinator will be designated to oversee the DSME program. The coordinator will have oversight responsibility for the planning, implementation, and evaluation of education services. Coordination is essential to ensure that quality diabetes self-management education and support is delivered through an organized, systematic process. As the field of DSME continues to evolve, the coordinator plays a pivotal role in ensuring accountability and continuity in the education program. The coordinator's role may be viewed as that of coordinating the program (or education process) and/or as supporting the coordination of the many aspects of self-management in the continuum of diabetes and related conditions when feasible. This oversight includes designing an education program or service that helps the participant access needed resources and assists him or her in navigating the health care system. The individual serving as the coordinator will have knowledge of the lifelong process of managing a chronic disease and facilitating behavior change, in addition to experience with program and/or clinical management. In some cases, particularly in solo or other small practices, the coordinator may also provide DSME and/or DSMS.

The Program Coordinator is the primary contact for any information sent or received by the program. The coordinator must have experience or academic preparation in program management and care of people with chronic disease. The coordinator oversees the program at all sites. The following requirements must be reflected in the written job description of the program coordinator.

- Coordinator must have academic preparation and/or experience in program management
- Coordinator must have academic preparation and/or experience in the care of persons with chronic disease
- Coordinator must oversee the planning, implementation and evaluation of the DSMT Program at all times

Curriculum Vitae or resume of the coordinator reflects appropriate qualifications.
Coordinator is a **CDE** or **BC-ADM** or has **15 hours** of CE credits for multi-discipline program or **20 hours** of CE credits for single discipline program. Topics should include but are not limited to: chronic disease care, patient education and program management. The current written job description and coordinator's current curriculum vitae or resume' must be available especially for review during a site audit. See below for Program Coordinator description template.

The coordinator must have 15 continuing education units (CE's) per year if they are not a CDE.

A Program Coordinator must be in place at all times. If a coordinator leaves, the change must be reported to the Education Recognition Program staff and the DPCP within 30 days.

PROGRAM COORDINATOR
JOB/POSITION DESCRIPTION TEMPLATE

1. **The title of this position should be one that indicates leadership, such as coordinator, manager or director.**

2. **Be sure the following is included someplace in the description of the tasks:**
   - This person oversees the program (at all sites, if there is more than one site of the program).

3. **Be sure the following is included in the qualifications for this position:**
   - This person must have experience in program management.
   - This person must have experience in care of people with a chronic disease.

Job description (or other document e.g. performance appraisal tool) reflects requirements for diabetes or other chronic disease care, patient education and/or program management, and verifies the coordinator's responsibilities in planning, implementing and evaluating the DSME.

DSMT Program Instructors

Standard 5 Instructional Staff – One or more instructors will provide DSME and, when applicable, DSMS. At least one of the instructors responsible for designing and planning DSME and DSMS will be a registered nurse, registered dietitian, or pharmacist with training and experience pertinent to DSME, or another professional with certification in diabetes care and education, such as a CDE or BC-ADM. Other health workers can contribute to DSME and provide DSMS with appropriate training in diabetes and with supervision and support. Historically, nurses and dietitians were the main providers of diabetes education. In recent years, the role of the diabetes educator has expanded to other disciplines, particularly pharmacists. Reviews comparing the effectiveness of different disciplines for education have not identified clear differences in the quality of services delivered by different professionals. However, the literature favors the registered nurse, registered dietitian, and pharmacist serving both as the key primary instructors for diabetes education and as members of the multidisciplinary team responsible for designing the curriculum and assisting in the delivery of DSME. Expert consensus supports the need for specialized diabetes and educational training beyond academic preparation for the primary instructors on the diabetes team. Professionals serving as instructors must document appropriate continuing education or comparable activities to ensure their continuing competence to serve in their instructional, training, and oversight roles. Reflecting the evolving health care environment, a number of studies have endorsed a multidisciplinary team approach to diabetes care, education, and support. The disciplines that may be involved include, but are not limited to, physicians, psychologists and other mental health specialists, physical activity specialists (including physical therapists, occupational therapists, and exercise physiologists), optometrists, and podiatrists. More recently, health educators (e.g., Certified Health Education Specialists and Certified Medical Assistants), case managers, lay health and community workers, and peer counselors or educators have been shown to contribute effectively as part of the DSME team and in providing DSMS. While DSME and DSMS are often provided within the framework of a collaborative and integrated team approach, it is crucial that the individual with diabetes is viewed as central to the team and that he or she takes an active role. Certification as a diabetes educator (CDE) by the National Certification Board for Diabetes Educators (NCBDE) is one way a health professional can demonstrate mastery of a specific body of knowledge, and this certification has become an accepted credential in the diabetes community. An additional credential that indicates specialized training beyond

basic preparation is board certification in Advanced Diabetes Management (BC-ADM) offered by the AADE, which is available for nurses, dietitians, pharmacists, physicians, and physician assistants. Individuals who serve as lay health and community workers and peer counselors or educators may contribute to the provision of DSME instruction and provide DSMS if they have received training in diabetes management, the teaching of self-management skills, group facilitation, and emotional support. For these individuals, a system must be in place that ensures supervision of the services they provide by a diabetes educator or other health care professional and professional back-up to address clinical problems or questions beyond their training. For services outside the expertise of any provider(s) of DSME and DSMS, a mechanism must be in place to ensure that the individual with diabetes is connected with appropriately trained and credentialed providers.

Instructors – Must include at least one RD or one RN or one Pharmacist (Primary Staff)

- Instructors are responsible for oversight of the program for person with diabetes.
- Any other instructors must be of a health profession that could sit for the CDE exam if the individual chooses to do so.
- The Instructors ensures that the program meets the National Standards for DSMT Program and Education Recognition Program status.
- Instructors perform the assessment, educational intervention, evaluation and follow-up with the program participants.

Discipline-specific licenses and/or registrations.

Single Discipline Program:
Instructor(s) must be CDE or have BC-ADM or accrue 20 hours/year of continuing education credits if practicing in a single discipline program. (CE topics must be diabetes-specific, diabetes-related, education or psychosocial and relevant to services provided or population(s) served).
Multiple Discipline program:
Instructors working in a multidisciplinary diabetes education setting (with other disciplines as part of the instructional staff) can be CDE, BC-ADM or accrue 15 hours/year of continuing education credits.

DSMT Program Instructor responsibilities include:

- Participate in the planning, implementation, and evaluation of the DSMT Program
- Complete the one-to-one Preassessment, and one-to-one meal planning interview for participants referred to the DSMT program prior to class attendance
- Instruct participants in group and one-to-one settings in coordination with other instructors
- Provide follow-up education in coordination with other instructors
- Participate on the DSMT Program Advisory/Oversight committee
- Documentation of Assessment and Education of Participants
    - Individualized initial assessments
    - Face-to-face assessment of participant's knowledge, self-management skills and diabetes-related behaviors based on the content areas of the National Standards
    - Education plan with measurable learning objectives and participant selected objectives based on assessment
    - Educational interventions which include date of intervention, content taught and

names of instructors
- o Evaluation of progress towards/or achievement of learning and behavioral objectives and related health or quality of life outcomes
- o Collaboration among instructional staff

Back-up Instructor

A back-up instructor is someone who teaches 10% or more of your total program and is professional prepared and supported by the DSMT Program Coordinator and primary staff to deliver any part of the DSMT Program curriculum as assigned and completed required program documentation. These individuals are eligible to attend the NIP Training.

Resource Person

Someone who assists in your program could be considered a Resource person. A Resource Person is someone who teaches less than 10% of your total program and only in the subject matter of the resource person's area of expertise. A Resource Person does NOT assess learning need nor evaluate the learning experience nor do any part of the follow-up portion of the comprehensive program. A Resource person does not document. These individuals are not eligible to attend the NIP Training.

Physician Advisor

It is recommended that each DSMT Program site will have a Physician Advisor.

The Physician Advisor may be any physician with formal diabetes training, with a large caseload of patients with diabetes in his/her practice, or with an interest in diabetes.

The responsibilities of the Physician Advisor include:

- Promote administrative support for the DSMT Program.
- Provide technical assistance to the DSMT Program Instructors on diabetes management as needed
- Promote and support patient referrals to the DSMT Program
- Participate on the DSMT Program Advisory/DSMS Committees
- Act as a liaison between the Advisory/DSMS Committees and the site's medical staff and members of the area's medical community
- Promote diabetes continuing education and staff development for staff physicians at the site
- Participate in the evaluation and development of the annual Program Plan for the DSMT Program

Instructor Continuing Education

Program instructors will participate in the DPCP's New Instructor Program (NIP) when they first become an DSMT Program instructor.

Certified Diabetes Educators (CDE) are required to obtain 75 hours of continuing education or re-take the CDE certifying exam every five years. For non-CDE instructors 15 hours of continuing education is required annually. The year is based on the anniversary date of the Education Recognition.

It is hoped that all instructors will participate in continuing education that will have personal and professional benefits, and still address the needs of the people with diabetes.

The 15 hours of continuing education (20 hours/year if practicing in a single discipline program) can be in any one or any combination of the following topic headings: diabetes specific, diabetes related, psychosocial, and educational. These topics are defined as follows:

- Diabetes specific is any program or session topic or any program objective or course outline heading that specifically states the word "diabetes"
- Diabetes related is any program or session topic or any program objective or course outline heading that clearly states issues related to diabetes, but does not specifically use the word, "diabetes". These topics shall be, but not limited to the following: nutrition, exercise, retinopathy, nephropathy, neuropathy, cardiovascular disease, stroke, lipids, obesity, metabolic syndrome and pre-diabetes
- Psychosocial is any program or session topic or any program objective or course outline heading that clearly articulates psychiatric, psychological, behavior modification or social content
- Educational is any program or session topic or any program objective or course outline heading that uses any one of the following words: teaching, knowledge, learning, education; training, instruction, or culture

All Continuing Education Units (CEUs) must be awarded from an agency that accredits Continuing Education Programs. Examples of these agencies are ACCME, ANCC, ADA, AD+A,ACPE, CDR. All CEUs must have been earned within the year (12 months) prior to the date the outline ADA or AADE Education Recognition application is submitted. Continuing Education hours can be earned anytime up to the date of submission of the Education Recognition application.

On-line CE offerings can be found at:
ADA: http://professional.diabetes.org/Congress_Display.aspx?TYP=9&CID=71060

AADE: http://www.diabeteseducator.org/ProfessionalResources/database.html

Required Documentation for Continuing Education

For all members of the Instructional Team or Instructional Staff who are not a CDE, keep a copy of official verification for the required number of Continuing Education hours. The official, verification documentation of completion of CE hours must include:

- The non-CDE educator's name
- The title of the CE offering
- The date the CE hours were awarded (the date must be within the 12 months prior to the online application)
- The number of CE hours, and
- The Continuing Education Credentialing Body
- Academic hours (college credits) will not be accepted unless the college or university is a Credentialing Body and is willing to convert them to Continuing Education hours and supply verification of conversion on official letterhead

Continuing Education must have been earned within the year prior to the date the Education Recognition application is submitted online.

Keep copies of the official program brochures with objectives or a copy of the official course outline.

All CDE instructor certificates and Commission on Dietetic Registration cards for registered dietitians must be current and available at the site at all times.

Continuous Quality Improvement

Standard 10 Quality Improvement – The provider(s) of DSME will measure the effectiveness of the education and support and look for ways to improve any identified gaps in services or service quality using a systematic review of process and outcome data. Diabetes education must be responsive to advances in knowledge, treatment strategies, education strategies, and psychosocial interventions, as well as consumer trends and the changing health care environment. By measuring and monitoring both process and outcome data on an ongoing basis, providers of DSME can identify areas of improvement and make adjustments in participant engagement strategies and program offerings accordingly. The Institute for Healthcare Improvement suggests three fundamental questions that should be answered by an improvement process:

- *What are we trying to accomplish?*
- *How will we know a change is an improvement?*
- *What changes can we make that will result in an improvement?*

Once areas for improvement are identified, the DSME provider must designate timelines and important milestones including data collection, analysis, and presentation of results. Measuring both processes and outcomes helps to ensure that change is successful without causing additional problems in the system. Outcome measures indicate the result of a process (i.e., whether changes are actually leading to improvement), while process measures provide information about what caused those results. Process measures are often targeted to those processes that typically impact the most important outcomes.

Annually, the DSMT Program team will outline its program objectives, resources, activities, and evaluation plan for the coming year in a written **Program Plan.** This Plan will focus and guide the team's efforts in program development, implementation and evaluation at the site (e.g. Continuous Quality Improvement.) The Plan will serve as the basis for program review each year and will be modified for the coming year based on program evaluation and participant feedback. Input into the annual site evaluation process will come from the DSMT Program Team, Advisory Committee, and Program participants. Evaluation results, as well as recommended modifications to the Program Plan, will be shared with these groups to maintain clear communication and focus for the site. Please note the following:

There is documentation of a CQI plan/process. (e. g. written policy, annual program plan, CQI meeting minutes)

There is documentation of at least one project following the quality improvement plan.

There is evidence of application of the results of the quality improvement project to the DSME upon completion

The annual Program Plan will include the site's plan for measuring and evaluating both program and participant outcomes for the coming year, mechanisms for evaluating participant satisfaction, and specific activities that will be conducted by the DSMT Program to improve the site's performance in diabetes education. The Plan's clinical and behavioral outcome indicators will include (but not be limited to) the site's CQI activities. Categories of individualized behavioral outcomes/objectives/goals which may be used are:

- Nutritional management/healthy eating
- Physical Activity/Being Active
- Medications/Taking Medications
- Preventing, detecting, treating acute complications/problem solving
- Risk Reduction/Reducing Risks
- Psychosocial adjustment/Healthy coping

Program outcomes that may be tracked as part of the CQI process include:

- A1C
- Complications
- Eye Exam
- Mortality
- Patient satisfaction
- Provider satisfaction
- Quality of Life
- Self Foot Exam

Initial Site Visit

Any agency interested in becoming a DSMT Program Site will participate in an Initial Site Visit facilitated by the Diabetes Prevention and Control Program.

The purpose of the Initial Site Visit is to review the components and guidelines of the DSMT Program and answer specific questions concerning Program development, delivery, and evaluation. The site will identify the prospective DSMT Program coordinator, instructors and advisory/oversight committee members prior to this initial visit. These team members will attend the Initial Site Visit. The written institutional policy will also be reviewed at the Initial Site Visit.

Following the Initial Site Visit, the new instructors will attend the next available DPCP New Instructor Program.

DPCP Site Visit

The DPCP staff will conduct visits at DSMT Program sites on an as needed basis.

DPCP staff is available for technical assistance and/or advice as requested by site personnel. Such assistance will be provided through oral or written communication, or through a visit to the site if needed or requested.

DSMT Program Access and Scheduling

Standard 3 Access - The provider(s) of DSME will determine who to serve, how best to deliver diabetes education to that population, and what resources can provide ongoing support for that population. Currently, the majority of people with diabetes and prediabetes do not receive any structured diabetes education. While there are many barriers to DSME, one crucial issue is access. Providers of DSME can help address this issue by:

- *Clarifying the specific population to be served. Understanding the community, service area, or regional demographics is crucial to ensuring that as many people as possible are being reached, including those who do not frequently attend clinical appointments.*
- *Determining that population's self-management education and support needs. Different individuals, their families, and communities need different types of education and support. The provider(s) of DSME and DSMS needs to work to ensure that the necessary education alternatives are available. This means understanding the population's demographic characteristics, such as ethnic/cultural background, sex, and age, as well as levels of formal education, literacy, and numeracy. It may also entail identifying resources outside of the provider's practice that can assist in the ongoing support of the participant.*
- *Identifying access issues and working to overcome them. It is essential to determine factors that prevent individuals with diabetes from receiving self-management education and support. The assessment process includes the identification of these barriers to access. These barriers may include the socioeconomic or cultural factors mentioned above, as well as, for example, health insurance shortfalls and the lack of encouragement from other health providers to seek diabetes education.*

Each DSMT Program site will offer the DSMT Program a minimum of four times in a calendar year.

Offering the Program at least four times per year facilitates timely access to diabetes education. If the site's minimum number of participants is not reached, the program may be canceled. A "cancelled program" may be considered one of the four required program offerings.

The DSMT Program site will establish a policy for the minimum and maximum number of attendees for each program offered. Medicare recommendations for group size are 2-20 individuals; not all group members must be Medicare beneficiaries.

Accessibility improves when the site schedules the DSMT Programs a year in advance. This increases awareness of classes for physicians, community members, and others making referrals. A variety of offerings both days and evenings, spread evenly throughout the year, will also improve accessibility.

A complete DSMT Program includes the following components:

- Physician referral
- Preassessment interview
- One-to-one meal planning interview
- Series of classes
- Postassessment interview to be conducted within one month after the last class

- Follow-up encounters conducted, at a minimum, three months, six months, and one year after the postassessment interview.

Group class time needs to be sufficient to cover the ten potential content areas (see *Curriculum* section) and be conducive to learning and completion. Eight to ten hours of class time is generally recommended, usually conducted as a series of four or five classes, and spaced over three to four weeks. However, scheduling that best meets the needs of the Participant is encouraged.

Each DSMT Program site will establish its own policy on class length and frequency, based on the needs of their program participants.

Marketing of DSMT Program

Sites may wish to implement marketing strategies listed below to increase referrals and attendance at DSMT Programs:

Increase Referrals:

- Offer classes at varying times of day, evening, weekends, or day-long program
- Develop a policy on maximum waiting time to enter the program
- Personally visit PCP offices to provide information about DSMT Program
- Host a breakfast to inform PCP office staff of DSMT Program
- Ask physician advisor to promote DSMT Program sharing outcome data at grand rounds
- Have participant who attended and benefited speak at community groups or grand rounds as part of promotion of local DSMT Program
- Provide local chronic disease and mental health care managers with information about DSMT Program
- Design brochure about your DSMT Program and distribute widely to PCP offices, community and worksite settings
- Work with local Healthy Maine Partnership (HMP) to promote attendance at DSMT program.
- Work with your Public Health District Coordinating Council (DCC) to identify opportunities to include them and their members as part of your Advisory/DSMS committees.
- Work with your regions Community Care Team (CCT) to network on opportunities to generate referrals to your program, include CCT members are part of the your Advisory/DSMS committees.

Increase Attendance:

- Offer incentives to attend classes and follow-up encounters (prizes, gifts from drug companies, points)
- Offer class during a meal time (provide lunch or dinner – opportunity to discuss how to fit food in meal plan)
- Offer group follow-up (participants like to get back together after initial classes)
- Encourage participants to come for follow-up especially if they have been struggling. Reinforce that follow-up is not to judge them but to help problem-solve any issues or challenges they may be having

DSMT Electronic Medical Records (EMR) & Electronic Health Records (EHR)

Sites have the option of utilizing electronic medical/health record (EMR/EHR) systems of monitoring/reporting outcomes related the DSMT Program and its participants. DSMT Programs may also utilize one of the ADA or AADE recognition bodies DSMT program software:
ADA – Chronicle Diabetes
http://professional.diabetes.org/Recognition.aspx?typ=15&cid=84040

AADE – AADE7 SYSTEM
http://www.diabeteseducator.org/ProfessionalResources/A7S.html

or continuing with the DSMT Program's paper system. The DPCP encouraged all sites to be converted to a computer based data collection system within the next year. Contact your Information Technologies (IT) department to find out how you can improve your data collection, monitoring, and reporting systems.

The DPCP in 2006 developed Microsoft Access database computer software that was used by programs for DSMT Program data collection purposes. That software will no longer be supported by the DPCP as of April 1st 2012.

Documentation

Standard 9 Patient Progress - The provider(s) of DSME and DSMS will monitor whether participants are achieving their personal diabetes self-management goals and other outcome(s) as a way to evaluate the effectiveness of the educational intervention(s), using appropriate measurement techniques. Effective diabetes self-management can be a significant contributor to long-term, positive health outcomes. The provider(s) of DSME and DSMS will assess each participant's personal self-management goals and his or her progress toward those goals. The AADE Outcome Standards for Diabetes Education specify behavior change as the key outcome and provide a useful framework for assessment and documentation. The AADE7 lists seven essential factors: physical activity, healthy eating, taking medication, monitoring blood glucose, diabetes self-care–related problem solving, reducing risks of acute and chronic complications, and psychosocial aspects of living with diabetes. Differences in behaviors, health beliefs, and culture as well as their emotional response to diabetes can have a significant impact on how participants understand their illness and engage in self-management. DSME providers who account for these differences when collaborating with participants on the design of personalized DSME or DSMS programs can improve participant outcomes. Assessments of participant outcomes must occur at appropriate intervals. The interval depends on the nature of the outcome itself and the time frame specified based on the participant's personal goals. For some areas, the indicators, measures, and time frames will be based on guidelines from professional organizations or government agencies.

Attainment of goals/outcomes shall be measured regularly in order to evaluate the effectiveness of the educational intervention

Instructors will document the individual's assessment, education plan, intervention, evaluation, and follow-up in a permanent confidential educational record. Documentation also will provide evidence of collaboration among instructional staff, providers, and referral sources.
There is evidence of a collection and summary of participant behavior goals used to evaluate the effectiveness of the DSMT Program. There is evidence of other outcome (e.g. clinical, quality of life, process) to evaluate the effectiveness of the DSMT Program.

In the United States the two DSMT Education Recognition/Accreditation Program professional organizations are:
American Diabetes Association (ADA) – Education Recognition Program (ERP)
http://professional.diabetes.org/Recognition.aspx?typ=15&cid=84040
American Association of Diabetes Educators (AADE) – Diabetes Education Accreditation Program (DEAP)
http://www.diabeteseducator.org/ProfessionalResources/accred/

ADA or AADE program documentation requirements for maintaining recognition/accreditation is in alignment with the Maine DPCP requirements for DSMT Program documentation. All DSMT Program sites in Maine must follow the documentation requirements for participant and programs outcomes tracking and reporting for their respective recognition/accreditation (ADA or AADE) body to maintain active program status. Should a DSMT programs status change the Site Coordinators must contact the DPCP within 30 days.

DSMT Program Site
(As of September 2013)

DSMT Program Site

Blue Hill Memorial Hospital
Bridgton Hospital
Cary Medical Center
Central Maine Endocrinology & Diabetes Center
Eastern Maine Medical Center
Franklin Memorial Hospital
Goodall Hospital
HomeHealth Visiting Nurses- Take Control
Houlton Regional Hospital
Inland Hospital
Maine Coast Memorial Hospital
MaineGeneral Medical Center
Maine Medical Partners Diabetes and Endocrinology Center
Maine Medical Partners Diabetes and Endocrinology Center/
Pediatric Specialty Care/Endocrinology & Diabetes
Mayo Regional Hospital
Mid Coast Hospital
Miles Memorial Hospital
Millinocket Regional Hospital
Mount Desert Island Hospital
Northern Maine Medical Center
Parkview Adventist Medical Center
Pen Bay Medical Center
Redington-Fairview General Hospital
St. Joseph Hospital
St. Mary's Regional Medical Center
Sebasticook Valley Health
Stephens Memorial Hospital
The Aroostook Medical Center
The Mattina R. Proctor Diabetes Center at Mercy
Waldo County General Hospital
York Hospital

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Program Referral

Any person with diabetes may be referred to the DSMT Program. Participants (except Medicare recipients) may repeat the DSMT Program, if appropriate, based on clinical and educational needs.

Dietitians, discharge planners, home health agencies, nurses, physicians, care managers, public health nurses, other health care providers, or the patient may initiate referrals. These individuals are defined as Non-Physician Provider (NPP).

Regardless of who initiates the referral, a written physician referral is required for all participants.

When making the referral, the physician or qualified non-physician provider is encouraged to outline the person's medical history, therapeutic objectives, current clinical status and current management plan. In so doing, the physician remains involved in the education process and initiates communication with the DSMT Program instructors.

Examples of referral forms can be found in Tab 16 Appendix.

Note: The Centers for Medicare and Medicaid Services (CMS) require that the following information be included in the physician referral:

- Indicate that the person is diagnosed with diabetes (criteria for diagnosis: two (2) Fasting Blood Glucose (FBG) tests over 125 mg/dl)
- Indicate whether the referral is for
  - Initial DSMT
  - Follow-up DSMT
  - Initial diabetes MNT
  - Follow-up diabetes MNT
- Indication that person has special needs which require individual DSMT
- Physician certifying statement

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Preassessment Interview

Standard 7 Individualization - The diabetes self-management, education, and support needs of each participant will be assessed by one or more instructors. The participant and instructor(s) will then together develop an individualized education and support plan focused on behavior change. Research has demonstrated the importance of individualizing diabetes education to each participant's needs. The assessment process is used to identify what those needs are and to facilitate the selection of appropriate educational and behavioral interventions and self-management support strategies, guided by evidence. The assessment must garner information about the individual's medical history, age, cultural influences, health beliefs and attitudes, diabetes knowledge, diabetes self-management skills and behaviors, emotional response to diabetes, readiness to learn, literacy level (including health literacy and numeracy), physical limitations, family support, and financial status. The education and support plan that the participant and instructor(s) develop will be rooted in evidence-based approaches to effective health communication and education while taking into consideration participant barriers, abilities, and expectations. The instructor will use clear health communication principles, avoiding jargon, making information culturally relevant, using language- and literacy appropriate education materials, and using interpreter services when indicated. Evidence-based communication strategies such as collaborative goal setting, motivational interviewing, cognitive behavior change strategies, problem solving, self-efficacy enhancement, and relapse prevention strategies are also effective. Periodic reassessment can determine whether there is need for additional or different interventions and future reassessment. A variety of assessment modalities, including telephone follow-up and other information technologies (e.g., Web based, text messaging, or automated phone calls), may augment face-to-face assessments. The assessment and education plan, intervention, and outcomes will be documented in the education/health record. Documentation of participant encounters will guide the education process, provide evidence of communication among instructional staff and other members of the participant's health care team, prevent duplication of services, and demonstrate adherence to guidelines. Providing information to other members of the participant's health care team through documentation of educational objectives and personal behavioral goals increases the likelihood that all the members will work in collaboration. Evidence suggests that the development of standardized procedures for documentation, training 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.

The instructor will schedule a preassessment interview with the individual upon receipt of a written/electronic physician referral or qualified non-physician provider.

The purpose of the preassessment interview is to:

- Establish a relationship with the person with diabetes
- Assess what the person knows and feels about diabetes
- Assess how the person lives with diabetes day-to-day
- Assess learning needs and influences

The assessment assures that learning settings, interventions, and materials are appropriate and based on the learners' unique needs, experiences, and preferences.

Participants will be encouraged to invite a family member, friend, or significant other to the preassessment interview.

Following the completion of the preassessment interview, the DSMT Program Team and participant will mutually develop an **individualized education plan**. Behavior change goal setting will also begin following the preassessment. It is important to conduct the preassessment interview before the classes begin to ensure individualization of the education plan and behavior change goals. **The completed data forms may be used as documentation of an individualized education plan.**

During the preassessment interview, the instructor will explore the following major assessment areas with the DSMT Program participant:

(1) Relevant medical history and health status
(2) Attitudes and health beliefs
(3) Social supports
(4) Lifestyle
(5) Learning style and readiness to learn
(6) Current knowledge, skills, and behaviors related to diabetes self-care
(7) Cultural influences

Assessing the individual in each of these seven areas will provide the instructor with important information to individualize the participant's education plan.

Relevant Medical History and Health Status

Cognitive and physical limitations can affect the learning experience. Relevant medical history and health status information can be recorded on the patients electronic or paper medical record.
If there are any questions concerning specific health status information self-reported by the individual, the instructor needs to contact the referring physician.

Attitudes and Health Beliefs

Attitudes and health beliefs can affect the learning experience. Assessing attitudes and health beliefs allows the instructor to make the DSMT Program relevant and realistic for each participant. Attitudes need to be assessed in a warm, supportive, and personal atmosphere that creates the psychological safety necessary for people to explore their attitudes about diabetes.

Social Supports

Support systems influence individuals' ability to manage their diabetes. Information about interaction with families and friends is needed to develop an education plan. Interviewing other key family members and friends may also be helpful if the person agrees to this. Participants are encouraged to bring a family member/friend to the program. If the person with diabetes is unable to attend the DSMT Program, a family member/friend may attend the preassessment interview and classes. If this person is responsible for the person's care, the instructor should make the appropriate adjustments in the preassessment interview. The instructor will interview the family/friend to collect background information about the person with diabetes. However, the remainder of the preassessment interview needs to be conducted with the family/friend.

The instructor needs to assess the knowledge and skill level of the family/friend and develop appropriate educational objectives based on this person's needs. (Note: the person with diabetes must be present at all encounters for billing to occur).

Life Style

Life style assessment provides important information on the person's daily routine including his/her physical activities, food schedules, work, and interests, and how this has changed with diabetes.

Learning Style

Learning style includes assessment of reading ability, preference for group and/or individual instruction, and how they usually learn new skills. Learning preferences may include experiential (learning by doing), print (written materials), visual (tables, graphs, pictures, charts), auditory (listening) or verbal (discussion). Participant preference of learning style can be documented on electronic or paper medical record.

Knowledge/Skills/Behaviors

Each instructor may develop their own knowledge/skills/behavior checklist based on their participants' unique needs and circumstances. One way to assess knowledge/skills/behaviors is to ask and/or observe what people already know and do about diabetes. Demonstrating how they test their blood glucose, or having them select foods on their meal plan from a menu, are both examples of how knowledge/skills/behaviors can be measured. Results of the knowledge/skills /behaviors assessment can be documented on electronic or paper medical record..

Cultural Influences

Culture will influence learning style and will affect the learning experience. Assessment of cultural influences includes family traditions, folk remedies, and cultural attitudes about education and medical care.

All relevant medical information and health status information, as well as all appropriate information obtained from the other assessment areas, can be recorded on electronic or paper medical record. The Nurse and Dietitian instructors will determine which demographic and health status information each instructor will collect to avoid unnecessary duplication of efforts and participants answering questions twice. Team members need to plan time to share assessment information with each other or, at a minimum, have information in a file accessible to all instructors in an effort to aid communication and expedite data collection.

Behavior Change Goals and Outcomes

Behavioral goal setting discussions may occur during the preassessment, one-to-one meal planning interviews or the postassessment interview.

The instructor will guide the participant in identification of measurable achievable behavior change goals. Progress toward achieving the goals will be evaluated at each follow-up session and can be documented on electronic or paper medical record. New goals, and revision of existing goals, will also be documented.

The purpose of having participants select goals for behavior changes is to help them prioritize their own diabetes self-care activities and to focus on those actions that are most important for achieving desired diabetes outcomes. For each behavior change goal, the participant must believe the proposed behavior change will be worthwhile, useful, and important for achieving good diabetes management; the behavior change will improve his/her health or quality of life; and he/she is highly likely to achieve the goal.

Although behavior change goals are developed in the preassessment, one-to-one meal planning and postassessment interviews, the instructor and participant need to reassess and revise, as appropriate, the specifics of the proposed goals at each follow-up encounter. Long-range behavior change goals need to build on success with achievable short-range goals. It is very important for the instructor to help the participant choose realistic behavior change goals and to record the goals in simple, clear, measurable sentences. Identifying rewards can also enhance progress towards achieving goals.

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One-To-One Meal Planning Session

A one-to-one meal planning session will be conducted and it is recommended that this be completed prior to class attendance.

The one-to-one meal planning session serves a similar purpose as the preassessment interview. A relationship is developed between the person with diabetes and the dietitian instructor to assess knowledge, skills, attitudes, behaviors, social supports, and cultural influences surrounding nutritional issues. In addition, **an individualized meal plan is developed** and behavior change goals are determined as appropriate.

The *Preassessment Interview Guide* (see *Appendix*) may be adapted to nutritional concerns for this session. For example, when assessing attitude, it may be helpful to ask the participant, "How does it feel to follow a meal plan?" When assessing family/social support, the instructor might ask the participant, "Who prepares the food?" or "How does the family feel about your being on a meal plan?"

Instructors are free to use any instruments they find useful to conduct the nutrition assessment and develop an individualized meal plan, such as a 24-hour or three-day recall, or a food frequency crosscheck.

Dietitian instructors will also use information from the overall preassessment of knowledge, skills, attitudes, lifestyle, and social supports, information from the nutrition assessment, and pertinent laboratory values, to develop a meal plan designed specifically for the participant.

The American Diabetes Association *Nutrition Recommendations and Principles for People with Diabetes Mellitus*, endorsed by the American Dietetic Association, encourage the elimination of preprinted or standardized diet prescriptions such as a 1500-calorie ADA diet. There is no one ADA diet. **The *Recommendations* suggest that all persons with diabetes receive an individualized nutrition plan that considers individual needs.**

There are a variety of meal planning options available and they include:

- Guideline Approaches (Healthy Food Choices, Diabetes Food Guide Pyramid)
- Exchange List Approaches
- Counting Approaches (carbohydrate grams and fat grams)
- Menu Approaches (individualized menus)
- Approaches for Intensive Management (Carbohydrate/Insulin Ratio)

The Dietitian and Nurse instructors will determine which demographic and health status information they will each collect to avoid unnecessary duplication of efforts and participants answering questions twice. Team members need to plan time to share assessment information with each other or, at a minimum, have information in a file accessible to all instructors in an effort to aid communication and expedite data collection.

Behavior change goals aimed at achieving optimum nutritional status and diabetes management will be developed during the one-to-one meal planning session. Behavior change goals can be recorded on electronic or paper medical record. Progress towards the behavior change goals are monitored during follow-up sessions and evaluated at the one-year follow-up session.

Decisions about which meal planning approach and resources to use must include input from the client, and be individualized according to the referring physician's goals for diabetes control and the client's education, motivation level, need for flexible lifestyle, etc. Regular follow-up evaluation and continuing care are crucial to successful diabetes nutrition management.

The dietitian instructor may utilize non-directive and open-ended questions when interviewing the participant. For example, asking the participant if they think being on a meal plan is important, as opposed to lecturing on the importance of following a meal plan. All meal planning education cannot be accomplished at the one-to-one meal planning session. Instead, the primary goal of this session is to develop a trusting relationship with the individual, complete the nutritional assessment, and continue the development of an individualized education plan. Follow-up sessions can be scheduled to focus on various areas of the individual's education plan, such as progress towards interpreting the meal plan, food for sick days, or extra food for extra activity.

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Postassessment Interview

The instructor will conduct the postassessment interview within one month after the last class.

If an individual does not participate in the postassessment interview, the participant's individualized education plan will be considered incomplete.

The purpose of the postassessment interview is to:

- Assess and document knowledge and behaviors related to diabetes self-care
- Make appropriate referrals
- Set, review, and/or revise behavior change goals
- Compare pre and post class learning outcome achievement
- Establish a follow-up plan
- Document within the plan the establishment of what DSMS resources they intend to utilize

The postassessment interview allows the instructor to determine which learning needs identified in the preassessment interview are unmet. If a knowledge/skills/behavior assessment questionnaire is used during the preassessment interview, it should also be used to conduct the postassessment interview. The instructor will reassess the person with diabetes on those components he/she did not know prior to participating in the class series. **The postassessment documents what the participant has learned in the classes, not what he or she has been taught.**

The instructor can record participant data collected at the postassessment interview on electronic or paper medical record. The instructor can record any changes or additions to behavioral goals and outcomes on electronic or paper medical record.

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Follow-up Encounters

Standard 9 Patient Progress - The provider(s) of DSME and DSMS will monitor whether participants are achieving their personal diabetes self-management goals and other outcome(s) as a way to evaluate the effectiveness of the educational intervention(s), using appropriate measurement techniques. Effective diabetes self-management can be a significant contributor to long-term, positive health outcomes. The provider(s) of DSME and DSMS will assess each participant's personal self-management goals and his or her progress toward those goals. The AADE Outcome Standards for Diabetes Education specify behavior change as the key outcome and provide a useful framework for assessment and documentation. The AADE7 lists seven essential factors: physical activity, healthy eating, taking medication, monitoring blood glucose, diabetes self-care–related problem solving, reducing risks of acute and chronic complications, and psychosocial aspects of living with diabetes. Differences in behaviors, health beliefs, and culture as well as their emotional response to diabetes can have a significant impact on how participants understand their illness and engage in self-management. DSME providers who account for these differences when collaborating with participants on the design of personalized DSME or DSMS programs can improve participant outcomes. Assessments of participant outcomes must occur at appropriate intervals. The interval depends on the nature of the outcome itself and the time frame specified based on the participant's personal goals. For some areas, the indicators, measures, and time frames will be based on guidelines from professional organizations or government agencies.

Ideally in order to complete the individual's participation in the DSMT Program, the instructor will, at a minimum, conduct follow-up sessions at 3 months, 6 months, and one year from the postassessment date. The DSMT Program is designed to be individualized to each participant. Therefore, a participant may be considered to have completed the program if their learning needs and individual education plan have been accomplished in less than the year duration of the program.

DSMT Programs will attempt to complete required follow-up encounters on at least 80% of the participants who complete the postassessment interview in a given calendar year.

The DSMT Program does not require a follow-up session with program participants who did not complete their individualized class series and/or did not complete the postassessment interview; however, it may be appropriate for the education team to provide follow-up to these participants.

Follow-up encounters allow the instructor to:

- Reassess and reinforce self-care skills
- Evaluate learning retention
- Provide further education
- Evaluate progress with behavioral change goal achievement
- Complete the follow-up and plans identified at the postassessment interview
- Develop Diabetes Self-Management Support (DSMS) plan and share with referring provider

The DSMT Program site will develop its own policy about structure, content, and scheduling of follow-up sessions. The site is required to meet the minimum DSMT Program follow-up frequency noted above, but they can schedule additional follow-up sessions if needed.

Follow-up sessions will be individualized and based on the follow-up plan developed at the postassessment. If the postassessment demonstrated that the participant continues to have problems with insulin injection for example, then a follow-up encounter would be scheduled immediately. Likewise, if the problem involved meal planning, follow-up would be scheduled with the dietitian instructor. In contrast, a highly-motivated, well-controlled participant may not need a follow-up session for three months.

During follow-up encounters, the instructor may use a variety of teaching methods, including games, question and answer sessions, testimonials, videos, films, or meals with recipe sharing.

Follow-up sessions may be completed in several ways:

- The preferred method of follow-up is a one-to-one session with an instructor.
- A group session is also an acceptable form of follow-up. However, there needs to be an opportunity for an instructor to talk individually with clients about their needs and goals while another instructor works with the group.
- Sites may use a "drop-in" clinic where the instructors dedicate a specific time each week or month exclusively to follow-up sessions.
- Follow-up may be conducted by telephone.
- Follow-up may be conducted by mail.

The latter two methods (phone and mail) might be appropriate for those participants who cannot travel to the site, those who refuse to return, or those who need more frequent follow-up. These methods can be useful for outreach and accessibility.

Regardless of the format used, the instructor will need to ensure timely scheduling of follow-up sessions. Patient appointment reminders, either by mail or phone, will help remind participants of scheduled follow-up sessions. At the completion of the classes, it may be helpful to assign specific participants to certain instructors to be followed for the remainder of the year. This distributes the work of follow-up encounters between all the instructors and enhances continuity of care for the participants.

After each follow-up encounter, the instructors will document the follow-up session and communicate any necessary information with the referring physician and other team members.

Follow-up information collected on the patients electronic or paper medical record will provide the DSMT Program team with information useful for evaluating and improving their ability to help participants reach their education and behavior change goals. Data collected at the one-year follow-up session will provide valuable information for documenting the Program's effectiveness in contributing to improvements in specific diabetes clinical outcomes.

The instructor can document the three-month and six-month encounters on the patient’s electronic or paper medical record. The instructor may use the record for any additional follow-

up encounters. The instructor can document the results of the one-year follow-up session on the patients electronic or paper medical record. Evaluation of the participant's progress towards achieving their behavior change goals and health or quality of life outcomes will also be conducted at the one-year follow-up session and can be recorded in the record.

In addition to the scheduled follow-up sessions, an informal communication system may develop between the instructors and the person with diabetes and their family. The instructors may continue to be available to the individual and family for a visit or telephone call. Instructors can encourage participant contact with diabetes newsletters and journals, support groups, grocery store tours and other community programming, conferences, Internet websites, and other resources for ongoing diabetes education and support.

Diabetes Self Management support (DSMS) Plan

Standard 8 Ongoing Support - The participant and instructor(s) will together develop a personalized follow-up plan for ongoing self-management support. The participant's outcomes and goals and the plan for ongoing self-management support will be communicated to other members of the health care team. While DSME is necessary and effective, it does not in itself guarantee a lifetime of effective diabetes self-care. Initial improvements in participants' metabolic and other outcomes have been found to diminish after approximately 6 months. To sustain the level of self-management needed to effectively manage prediabetes and diabetes over the long term, most participants need ongoing DSMS. The type of support provided can be behavioral, educational, psychosocial, or clinical. A variety of strategies are available for providing DSMS both within and outside the DSME organization. Some patients benefit from working with a nurse case manager. Case management for DSMS can include reminders about needed follow-up care and tests, medication management, education, behavioral goal setting, psychosocial support, and connection to community resources. The effectiveness of providing DSMS through disease management programs, trained peers and community health workers, community based programs, information technology, ongoing education, support groups, and medical nutrition therapy has also been established. While the primary responsibility for diabetes education belongs to the provider(s) of DSME, participants benefit by receiving reinforcement of content and behavioral goals from their entire health care team. Additionally, many patients receive DSMS through their primary care provider. Thus, communication among the team regarding the patient's educational outcomes, goals, and DSMS plan is essential to ensure that people with diabetes receive support that meets their needs and is reinforced and consistent among the health care team members. Because self-management takes place in participants' daily lives and not in clinical or educational settings, patients will be assisted to formulate a plan to find community-based resources that may support their ongoing diabetes self-management. Ideally, DSME and DSMS providers will work with participants to identify such services and, when possible, track those that have been effective with patients, while communicating with providers of community-based resources in order to better integrate them into patients' overall care and ongoing support.

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Introduction to the Curriculum

Standard 6 of the *National Standards for Diabetes Self-Management Education and Support* (Diabetes Care, January 2013) states:

A written curriculum reflecting current evidence and practice guidelines, with criteria for evaluating outcomes, will serve as the framework for the provision of DSME. The needs of the individual participant will determine which parts of the curriculum will be provided to that individual. Individuals with prediabetes and diabetes and their families and caregivers have much to learn to become effective self-managers of their condition. DSME can provide this education via an up-to-date, evidence-based, and flexible curriculum. The curriculum is a coordinated set of courses and educational experiences. It also specifies learning outcomes and effective teaching strategies. The curriculum must be dynamic and reflect current evidence and practice guidelines. Recent education research endorses the inclusion of practical problem solving approaches, collaborative care, psychosocial issues, behavior change, and strategies to sustain self-management efforts.
The following core topics are commonly part of the curriculum taught in comprehensive programs that have demonstrated successful outcomes:

- *Describing the diabetes disease process and treatment options*
- *Incorporating nutritional management into lifestyle*
- *Incorporating physical activity into lifestyle*
- *Using medication(s) safely and for maximum therapeutic effectiveness*
- *Monitoring blood glucose and other parameters and interpreting and using the results for self -management decision making*
- *Preventing, detecting, and treating acute complications*
- *Preventing, detecting, and treating chronic complications*
- *Developing personal strategies to address psychosocial issues and concerns*
- *Developing personal strategies to promote health and behavior change*

While the content areas listed above provide a solid outline for a diabetes education and support curriculum, it is crucial that the content be tailored to match each individual's needs and be adapted as necessary for age, type of diabetes (including prediabetes and diabetes in pregnancy), cultural factors, health literacy and numeracy, and comorbidities. The content areas will be able to be adapted for all practice settings. Approaches to education that are interactive and patient centered have been shown to be effective. Also crucial is the development of action-oriented behavioral goals and objective. Creative, patient-centered, experience-based delivery methods beyond the mere acquisition of knowledge are effective for supporting informed decision making and meaningful behavior change and addressing psychosocial concerns.

This curriculum is designed to offer the nine content areas outlined in Standard 6, including learning outcomes and teaching strategies. The nine modules in the curriculum correspond to the nine required content areas of the *National Standards* and form the basis of the curriculum.

Guidelines for Using Curriculum:

General

The DSMT Program curriculum is designed for use with adults with diabetes in one-to-one and/or group settings. This curriculum is not appropriate for use with children.

The curriculum content provided in a diabetes self-management education (DSME) program needs to match each participant's needs as determined through individualized educational needs assessment and subsequent collaborative development of an education plan. The individualized assessment and plan guide the selection of educational interventions and diabetes self-management support (DSMS) strategies (see Standards 7 & 8 of the *National Standards).* Program "completion", therefore, is the completion of a participant's education plan, which may or may not include all nine content areas of the curriculum.

DSMT Program teams may use the curriculum in whole or part, tailoring the curriculum to the needs of the population served. Programs may change, add, or delete objectives, content, instructional methods and materials. Additional materials may be given to the participants on topics of interest, or advanced topics, which are not covered in this curriculum. The design of each complete DSMT Program offered at a site will differ depending on the needs of the participants.

Each of the nine content areas (Tabs - Disease Process and Treatment Options, Addressing Psychosocial Issues and Concerns, Promoting Health and Behavior Change, Nutritional Management, Physical Activity, Medications, Monitoring, Preventing Detecting and Treating Acute Complications, and Preventing Detecting and Treating Chronic Complications) may be used as a freestanding module. It may, however, be more appropriate for DSMT Program teams to integrate curriculum content in their education interventions. For example, *psychosocial issues*, *family involvement*, and *community resources* could be addressed at many points throughout the Program. Similarly, sites might choose to integrate g*oal setting* into each of the nine content areas.

Programs are not required to present the modules in the same order in which they appear in the manual; the order will vary based on the assessed needs and education plans of the participants served by the DSMT Program site.

The length of time needed to teach each module will vary. For example, two, three, or four hours may be devoted to nutrition depending on the needs of the participants.

The instructional team, with the Advisory/DSMS Committees, needs to review and approve the curriculum regularly.

Learning Objectives

The curriculum provides suggested learning objectives for each content area and divides them into survival and intermediate/advanced levels. A survival level objective refers to basic knowledge that is needed at the time of diagnosis of diabetes. Several participant learning objectives are listed for each content area. It is not expected, nor advised, that the DSMT Program use every learning objective listed. It is the responsibility of each team to include learning objectives for each content area that are most appropriate for their target population and the assessed needs of the program participants. DSMT Programs may also add other pertinent learning objectives that are not listed with this curriculum. DSMT Programs need to quantify the learning objectives they choose for their individual programs to assure they are measurable as well as action-oriented, such as state two reasons, list three things, etc.

Periodic individualized reassessment is needed to evaluate attainment of learning objectives and the need for additional educational intervention, diabetes self-management support (DSMS) and/or future reassessment. Evaluation occurs after each one-to-one encounter or group session and throughout the educational experience. Documentation of ongoing evaluation, reassessment and follow-up plans will be included in the participant's education record.

The DSMT Program team will also use learning objective achievement as part of their continuous quality improvement to evaluate program outcomes.

Behavioral Objectives

The *National Standards for Diabetes Self-Management Education and Support* state that:

Diabetes self-management education (DSME) is the ongoing process of facilitating the knowledge, skill and ability necessary for diabetes self-care. The overall objectives of DSME are to support informed decision-making, self-care behaviors, problem-solving and active collaboration with the health care team, as well as to improve clinical outcomes, health status and quality of life.

The DSMT Program team needs to translate the knowledge it provides into self-management behavior. Self-management behavior is the desired outcome of diabetes self-management education.

The curriculum provides suggested behavioral objectives for each content area. All behavioral objectives are considered survival level. It is the responsibility of each team to include a behavioral objective(s) for each content area that is most appropriate for their target population and the assessed needs of the program participants. DSMT Program teams may also add other pertinent behavioral objectives that are not listed with this curriculum.

Content

The individualized needs assessment and education plan of each participant will determine content provided during the education experience. It is not expected, nor advised, that the instructor teach all of the content as outlined. For example, insulin administration content is recommended for people who are starting, or already taking, insulin.

The DSMT Program team needs to review and update content on a regular basis.

Instructor's Notes

The Instructor's Notes included with each content area provide suggested teaching strategies, instructional methods and materials. In addition, some notes assist the instructors with the interpretation of content and use of materials.

The curriculum suggests a variety of videos, models, and handouts from many sources. It is not expected, nor advised, that the DSMT Program team use only the materials listed. Additional or different resources may be added to the curriculum by the team. The DSMT Program team is responsible for choosing the teaching strategies, instructional methods and materials that best meet the needs of the target population and program participants. Education materials need to be appropriate to the community served in terms of content, message, readability, comprehension, and cultural relevance. Instructors are encouraged to use teaching strategies that are creative, patient-centered, experience-based and problem-solving.

The DSMT Program team, together with the advisory/oversight committee, needs to review and approve all materials used for the DSMT Program on a regular basis.

The *Materials List* included with each content area identifies sources for materials; refer to *Patient Education Materials: Ordering Information* in the *Appendix* for more information on these sources. Materials designated as self-developed (SD) generally require more tailoring to the resources and goals of the individual DSMT Program. Instructors are encouraged to contact other DSMT Programs and/or the Diabetes Prevention and Control Program for samples of self-developed materials.

Teamwork:

When more than one instructor provides the education in the DSMT Program, all instructors are encouraged to attend all the group classes whenever possible and be available to answer questions as they arise. By doing so, instructors will build their relationship with the participant and be more familiar with learning and behavioral goal achievement as well as self-management support and follow-up needs. Instructors need to communicate with each other about questions and issues that arise during education so that they can meet learning needs. Members of the

multidisciplinary team assisting with curriculum design as well as other resource people or guest speakers (i.e. physician, exercise physiologist, physical therapist, podiatrist, pharmacist, behavioral health specialist, etc.) may assist with class instruction. In this instance, however, an instructor needs to be in attendance to provide continuity for participants. Further, it is the responsibility of the instructor(s) to assure that resource people provide education consistent with the curriculum.

Participants with Special Needs:

Special needs of participants are identified during the preassessment interview. These needs may include visual impairment, low literacy, or a physical or psychological condition that affects the learning process. The instructors account for special learning needs when developing the individualized education plan. The Diabetes Prevention and Control Program's *Diabetes Resource List* and *Resource Material Inventory* describe resources to aid the instructor with developing the education plan for the person with diabetes.

The Americans with Disabilities Act (ADA) of 1990 mandates that all persons with disabilities have access to all the same materials, programs, and facilities as a person without disabilities. Any print material DSMT Program instructors provide needs to be available in large print, computer disk format, or on audiotape as appropriate for visually impaired persons. If audiotapes are desired, it is helpful to individualize the materials by recording information specifically requested by the individual participants. It is helpful to identify volunteers who are available to record information on audiotape. Please see *Appendix* for information on visual impairment resources.

Print materials used in the curriculum need to be assessed for their appropriateness to the literacy level of participants. Many of the handouts listed for the nine content areas are designed to be "easy to read" to accommodate various literacy levels. Teaching Patients with Low Literacy Skills by Doak, Doak, and Root can be borrowed from the Diabetes Prevention and Control Program for use when developing appropriate patient education materials.

Language interpreters can be secured for persons with hearing impairment for one-to-one as well as group sessions associated with the DSMT Program. All facilities used for the DSMT Program must be handicapped accessible.

Other Curricula:

Please see *Appendix* for other available curricula that meet the *National Standards for Diabetes Self-Management Education and Support* (January 2013).

Behavior Change:

General

People with diabetes are responsible for managing their diabetes. Daily decisions for self-care are in their hands and the consequences of their choices happen to them.

The goal of DSME is to help people with diabetes make healthy decisions and assume increasing responsibility for their own care. Self-management behavior is the desired outcome of DSME.

The *empowerment approach* is one approach to behavior change. In this approach, the educator's role is to assist individuals with making changes they identify which will result in good health. This approach:

- Emphasizes the whole person
- Acknowledges the person's role in decision making
- Considers readiness for change
    - Stages of change include precontemplation, contemplation, preparation, action, maintenance
    - Uses interventions appropriate to stages
- Educates for informed choice about treatment options, including:
    - Specific self-care information
    - Self-management skills
    - Coping skills
- Uses a learner-centered learning process, incorporating:
    - Experiences
    - Reflection
    - Insight
    - Environmental Relationship

Steps in Counseling for Behavior Change

- Explore the problem
    - Establish rapport
        - Assume the person has all the resources they need to succeed
        - Assume the person is making the best choice they can make at any given moment
        - Assume it is better to have choice than no choice
        - Assume resistance is only a form of feedback

- Assume there is no such thing as failure as long as you are willing to try something new

- Gather information

  - Ask open- ended questions to find out what is currently going on for the person
  - Assess stage of change
  - Observe non-verbal clues
  - Ask questions in a manner that empowers their self-management
    - What is it like for you to live with diabetes?
    - What is your greatest concern?
    - What is the hardest for you in caring for your diabetes?
    - What is your biggest obstacle to __?
    - What do you think makes it so hard?
    - What is your previous experience with __?
    - Which change would you like to start with __?

- Explore feelings
  - Help the person identify how she/he feels

    about having diabetes and, in

    particular, the behavior (or problem)

    that she/he is hoping to change

    - **Reflection of feeling**

      You feel angry because you always have to think about what you eat

    - **Hypothesis testing**

If I understand you correctly, you feel it is a lot of work to always have to plan what you are going to eat

- **Affirm and validate**

  Negative feelings can be scary

- **Keep the person thinking and talking**

  You hate your diet…why do you think you feel this way? How would this situation have to change for you to feel better about it?

- Identify and set goals
  - Selected by the person with diabetes
  - Build on past successes
  - Collaborative
  - The person understands advantages/disadvantages
  - Short-term

The person's goals are the framework for **the education and treatment plan**.

- *What is the problem/change/behavior/habit that you want to work on now?*
- *What is your goal for dealing with this? Where do you want to be?*
- *Is there one thing you will do when you leave here to improve things for yourself?*

- Make an action plan and commit to action
  - List options
  - Eliminate options that will not work
  - Prioritize remaining options
  - Build in success

- Contracts
- Rewards
    - *Are you willing to take action to improve the situation for yourself?*
    - *What are some steps that you could take to bring you closer to where you want to be?*

- Take action
    - Experiment with the behavior
- Maintain the change
    - Evaluate the result
        - Reflect on experiences and learn from them
    - Feedback
    - Revise as necessary
        - *How did the plan we discussed at your last visit work out?*
        - *What challenges/barriers did you encounter?*
        - *What did you do to overcome the challenges/barriers?*
        - *How did that make you feel?*

Teaching Tips:

General

The curriculum found in this DSMT Program Manual is written for the DSMT Program instructors. Language appropriate for participants should be used to teach the content.

Effective education is more than the transmittal of information; instructors are

encouraged to use interactive teaching strategies rather than presenting information only through lectures and audiovisuals. The instructors need to encourage the participants to talk to each other, share personal experiences, try out new ideas and skills, and enjoy themselves.

At the beginning of a class series, special attention needs to be given to creating an accepting and relaxed environment. Time needs to be allotted for participants to get to know and interact with each other.

Principles of Teaching and Learning

Teaching and learning principles are listed here to help instructors think about their role in the teaching process while they prepare for, and deliver, the components of the DSMT Program.

- Learning is a change in behavior.
- Teaching means helping someone learn to do something for his/herself.
- Teaching does not ensure that the person learns.
- As responsibility for self-care increases, the need to know will increase also.
- Concentration span decreases with fatigue.
- Threatening alienates the learner.
- Positive reinforcement motivates better than negative reinforcement.
- People learn by doing.
- Anxiety may increase interest, but may lessen retention.
- Law of primacy and recency: People remember best the first and last thing said in a class.
- Appealing to several senses reinforces learning. People remember more of what they do and say than what they only see or hear.
- Handouts and audiovisuals rarely meet learning needs on their own, but can help meet objectives when used with other teaching methods.
- Evaluation needs to be ongoing.

Characteristics of Adult Learners

The DSMT Program is designed for adults with diabetes mellitus. It is helpful for instructors to keep the following characteristics of adult learners in mind:

- Adults are usually self-directed and responsible for their own learning, they need to feel a need to learn and see a clear goal in order to participate fully in the educational process.

- Adults tend to be problem-oriented, rather than subject-oriented, learners. Adults usually want to acquire information that will help them solve specific diabetes problems (or current life problems) rather than study the subject of diabetes.

- Adults learn best when their own experience with diabetes is incorporated into diabetes education.

- Adults usually prefer to participate in the learning process actively rather than passively.

- Adults need to feel comfortable, worthwhile, and accepted in the learning process.

- Adults value their time.

Guidelines for Instructors

- Assess what is already known; start teaching what the learner wants to know; relate content to what is already known; build on past experience and competence.
- Assess visual and functional ability, respect/acknowledge attitudes and health beliefs; address psychosocial/stress/physical needs.
- Respect preferred learning style.
- Provide overview and rationale.
- Sequence content.
- Expect the learner to be successful; make goals realistic so success will be probable.
- Attend to class size and environment.
- Use a common language/body language; check facial expressions and body language for difficulty in understanding.
- Answer questions when they are asked; if more detailed explanations are needed, continue after class.
- Apply learning immediately and repeatedly.
- Allow for practice and rehearsal.
- Seek feedback and validate understanding.
- Make it "OK" for someone not to know; build trust.
- Use a variety of teaching techniques and materials.
- Recognize that learners can be teachers.
- Instructors need not:
    - Teach every moment
    - Try to impart everything they know
    - Get discouraged
    - Be afraid to say “I don’t know”; instructors are learners too!

Learning Style

Because participants will have a variety of preferred learning styles (identified during the preassessment interviews), it is helpful for instructors to provide a variety of learning activities and employ a variety of teaching techniques. Preferred learning

styles include:

Visual - Pictures, photographs, diagrams, charts help the visual learner to understand.

Auditory - Listening is the preferred method of learning through live lectures, discussion and audiotapes for the auditory learner.

Print - The print learner likes to read and have written materials to support his/her learning preference.

Experiential - Learning by doing or participating in “hands on” activities is preferred by the experiential learner.

Teaching Techniques

A variety of techniques that may be used in class to assist participants with learning include:

- Brainstorming
- Case studies
- Computers/Interactive training
- Conversation maps®
- Demonstration
- Discussion (Facilitated)
- Games
- Guest speaker
- Homework/self-study
- Printed/audiovisual material
- Role playing
- Self-assessment
- Skills training
- Storytelling
- Talking Circle
- Values clarification exercises

Refer to the Instructor’s Notes in each content module for specific examples of teaching techniques.

Guides for Educators:

Some of the guides that may be used by the DSMT Program team for education include:

- Peers
- DSMT Program Manual and Curriculum

- Other curricula (See *Appendix*)
- AADE Standards of Practice (See *Appendix*)
- National Standards for Diabetes Self-Management Education (See *Appendix*)

Resources for Educators:

- American Association of Diabetes Educators, The Art and Science of Diabetes Self-Management Education: A Desk Reference for Health Care Professionals. AADE, 2006.
- American Association of Diabetes Educators. Continuous Quality Improvement (CQI) – A Step by Step Guide for Quality Improvement in Diabetes Education, 2005.
- American Diabetes Association. Clinical Practice Recommendations, 2013.
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Disease Process and Treatment Options

Introduction

The purpose of this session is to provide an overview of the diabetes disease process and options available for treatment.

Although diabetes places people at risk for health problems, there are effective management tools available.

This session will begin to acquaint people with the role of self-care behaviors in lifelong learning about diabetes in their diabetes management.

This session provides support for the role of intensive management for glucose control in order to prevent or reduce the risks of complications associated with diabetes mellitus. Participants are encouraged to explore the benefits, responsibilities, and care requirements of improved glucose control in their own diabetes management.

Learning Objectives

Survival Level:

- State the type of diabetes s/he has.
- List the components of diabetes care: self-care, the diabetes management/care plan and visits with the health care team.
- Identify self-care behaviors.
- Describe his/her responsibility in care and how to use the health care and support system to meet care needs.
- State ways s/he can participate in lifelong learning about diabetes.

Intermediate/Advanced Level:

- Define diabetes in his/her own words.
- State that diabetes is a lifelong condition.
- State that the pancreas is the body organ that makes insulin.
- State that diabetes can affect the action of insulin in the body and its effect on the utilization of food.
- Define insulin resistance in his/her own words.
- State the differences between type 1, type 2 and gestational diabetes.
- State the signs and symptoms of diabetes.
- List factors that contribute to the development of diabetes.
- State how diabetes is diagnosed.
- State the recommended blood glucose goals.

- Explain the importance of blood glucose control for prevention of diabetes complications.
- State the relationship of food, activity, and medications (if used) to blood glucose levels.
- Identify issues of self-advocacy in dealing with legislation, insurance, the health care system, employment, and other related issues.

Behavioral Objectives

- □ Make a plan for one thing s/he will do for diabetes care.
- □ Make a plan for one way s/he will participate in lifelong learning about diabetes.

Evaluation Plan

Evaluation includes achievement of:

- □ Learning objectives identified in the education plan
- □ Participant-defined behavioral goals and objectives
- □ Education program goals and objectives

Materials List

Videos:

Introduction to Diabetes (MF/AADE)
The Game Plan (Milner Fenwick/AADE)
The Diabetes Home Video Guide (AADE)
What is Diabetes (Type 2) – 3rd Ed. (MF/AADE)

Models:

Body Apron (www.ideabetes.com)
Insulin Sphere (www.ideabetes.com)
Models/Pictures of Digestive Tract (www.enasco.com)

Handouts/Visuals:

AADE7™ (AADE)
Clinical Practice Recommendations (ADA, NDEP,SD)

AADE= American Association of Diabetes Educators **ADA**= American Diabetes Association **ADtA**= American Dietetic Association **AHEC**=Area Health Education Center **HHM**= DCP Home Health Manual **IDC**= International Diabetes Center **IHS**=Indian Health Service **LWD**= Living With Diabetes **MDRTC**=Michigan Diabetes Research and Training Center **MF**= Milner Fenwick **NDEP**= National Diabetes Education Program **NIDDK=** National Institute for Diabetes, Digestive and Kidney Diseases **PC**=Pharmaceutical Company **SD**= Self-Developed **UNE**= University of New England

Control Your Diabetes—For Life (NDEP)
Could You Have Diabetes and Not Know It? (ADA)
Diabetes Identification Resources (SD)
Diabetes Management/Care Plans (SD)
Diabetes Resource List (SD)
Four Steps to Control Your Diabetes. For Life.(NDEP)
Glucose Metabolism in Diabetes (LWD)
How Insulin Works (LWD)
Internet Resource List (SD)
Local Agency Bill of Rights (SD)
Local Legislators Resource List (SD)
Medicare/Medicaid Reimbursement Information (SD)
My Local Emergency Numbers (SD)
My Personal Care Card (ADA, NDEP,SD)
Normal Blood Glucose and Insulin Levels (LWD)
Normal Glucose Metabolism (LWD)
Organizations Resource List (SD)
Pancreas (LWD)
Personal Goal(s)/Behavior Change Plan (SD)
Publications Resource List (SD)
Resource Guide (ADA)
Type 1 Diabetes and You (ASPEN Diabetes Patient Education Manual)
Type 2 Diabetes and You (ASPEN Diabetes Patient Education Manual)

AADE= American Association of Diabetes Educators **ADA**= American Diabetes Association **ADtA**= American Dietetic Association **AHEC**=Area Health Education Center **HHM**= DCP Home Health Manual **IDC**= International Diabetes Center **IHS**=Indian Health Service **LWD**= Living With Diabetes **MDRTC**=Michigan Diabetes Research and Training Center **MF**= Milner Fenwick **NDEP**= National Diabetes Education Program **NIDDK=** National Institute for Diabetes, Digestive and Kidney Diseases **PC**=Pharmaceutical Company **SD**= Self-Developed **UNE**= University of New England

Disease Process and Treatment Options

Learning Objective	Content	Instructor's Notes
Define diabetes is in his/her own words. State that diabetes is a lifelong condition. State that the pancreas is the body organ that makes insulin.	I. Understanding diabetes A. Introduction 1.Chronic disease, but can be managed 2.Inability to use food properly; disorder in metabolism of carbohydrate, protein, and fat 3.Insufficient insulin activity or insulin resistance; disorder in metabolism of insulin B. Normal food metabolism 1.Food consumed changes to glucose 2.Glucose absorbed by intestines 3. Glucose enters blood 4.Glucose carried in blood to all parts of body 5.Incretin is released from the gut and stimulates insulin release and suppression of glucagon and decreased gastric emptying 6.Amylin and insulin are released from beta cells in the pancreas which helps to suppress glucagon and gastric emptying 7.Insulin released from pancreas as levels of glucose rise 8.Insulin attaches to body cell receptors and helps glucose move 9.Glucose provides the energy the body needs and maintains glucose level	Review learning objectives. Videos, models, handouts/visuals, discussion/whiteboard/ overhead, as appropriate, such as those listed below. Video: *The Game Plan* *The Diabetes Home Video Guide* (select portions) Model: *Body Apron* *Digestive Tract* Discussion: *What is diabetes?* Handout: *Pancreas*

State that diabetes can affect the action of insulin in the body and its effect on the utilization of food. Define insulin resistance in his/her own words.	10. The person without diabetes maintains blood glucose in a "normal" range no matter what they eat C. Food metabolism with diabetes 1. Glucose reaches the blood same in people without diabetes. 2. Glucose stays in the blood because it is not getting into the body cells. There is not enough insulin and/or insulin is not working well at the receptor sites on the cells due to insulin resistance. 3. Excess glucose may be released from the liver. 4. Glucose levels in the blood rise. 5. Kidneys begin to remove some of the excess glucose when levels are high and it is passed in the urine. D. Effect of insulin on utilization of food If there is not enough insulin, or insulin is not working well, the following will be affected; 1. Insulin and carbohydrate a. Allows movement of glucose from blood into cells b. Stimulates storage of glucose in the liver c. Inhibits the breakdown of stored glucose in the liver 2. Insulin and fat a. Promotes conversion of foods to fat tissue b. Inhibits the breakdown of fat tissue	Model: *Insulin Sphere* Handout: *Normal Glucose Metabolism* *Glucose Metabolism in Diabetes* *How Insulin Works*

State the type of diabetes s/he has. State the differences between type 1, type 2, and gestational diabetes.	3.Insulin and protein a.Stimulates protein synthesis within tissues b.Inhibits the conversion of protein to glucose II. Types of diabetes A. Type 1 1.Characteristics a.Approximately 10% of people with diabetes b.May be any age, but usually diagnosed before age 30 c.Rapid onset of symptoms d.Weight loss e.Low or absent endogenous insulin 2.Etiology a.Partially genetic, but no clear pattern of inheritance b.HLA (human leukocyte antigen) genetic markers present c.Thought to be autoimmune disease with genetic or environmental trigger d.Immune-mediated diabetes mellitus: cellular mediated autoimmune destruction of the beta cells of the pancreas e.Idiopathic diabetes mellitus: refers to forms of the disease that have no known etiology. B. Type 2 1.Characteristics a.Approximately 90% or more of people with diabetes	Handout: *Four Steps to Control Your Diabetes.For Life.* Discussion: *What type of diabetes do you have?* Handout: *Type 1 Diabetes and You* Handout: *Type 2 Diabetes and You*

	b.Usually diagnosed after age 30, but increasing prevalence in youth c.Gradual onset of glucose intolerance d.Patient may be asymptomatic e.Majority obese f.Endogenous insulin levels normal, elevated, or depressed g.Insulin resistance is the primary problem 2.Etiology a.Thought to have genetic basis b.Insulin resistance affected by obesity and lifestyle C. Gestational 1.Characteristics a.7% of pregnant population b.Identified at 24-28 weeks gestation c.Increased risk for developing type 2 d.Associated with increased risk of neonatal morbidity 2.Etiology a.Increase in hormones b.Abnormal utilization of maternal nutrients D. Pre-diabetes 1.Characteristics a.Blood glucose higher than normal but not high enough to be diabetes b.Metabolic stage intermediate between normal glucose homeostasis and diabetes. c.Fasting plasma glucose levels 100 -125 mg/dl;	

State the signs and symptoms of diabetes.	seventy-five (75) g oral glucose tolerance test value of ≥140 mg/dl but < 200 mg/dl at two hours d. Risk factor for future type 2 diabetes and cardiovascular disease e. Associated with insulin resistance syndrome f. Staying at healthy weight, being physically active and some diabetes medicines lower the chance of developing diabetes g. Diabetes prevention studies (1) DPP III. Signs and symptoms of diabetes A. General: Appearance of signs and symptoms results from blood glucose above normal; individuals vary regarding level of blood glucose causing symptoms; many people with type 2 diabetes feel no symptoms when their blood glucose is high B. Polyuria: Excessive urination The body uses a lot of water to pass excess glucose out through urine C. Polydipsia: Increased thirst To correct dehydration from loss of water in urine D. Polyphagia: Increased hunger	Discussion: *Have you experienced any of these symptoms? What did they feel like?*

List factors that contribute to	Cells are not getting glucose and signal that they need more E. Weight loss Cells are not nourished; the body uses alternative sources for energy; the body is also losing water F. Blurred vision Results from high glucose; results from changes in hydration of crystalline lens G. Slow healing Cells and small blood vessels are not working well to heal; high blood sugar also affects immune system and decreases the overall ability to fight infection H. Fatigue The body cells are starving because glucose is not getting to them; glucose is not being used for cell energy IV. Risk factors for developing diabetes A. Type 1 1.Genetic marker (HLA) 2.Anti-insulin or anti-islet cell antibodies (ICA) 3.Possible environmental trigger B. Type 2 1.Obesity	

the development of diabetes.	2. Over 30 years of age, but increased prevalence in youth 3. Blood relative of persons with diabetes 4. High risk groups: American Indian and Alaska Native, Hispanic-American, Asian-American, African-American 5. History of pre-diabetes 6. History of gestational diabetes or gestational carbodydrate intolerance 7. History of newborns weighing >9 pounds	Handout: *Could You Have Diabetes and Not Know It?* Discussion: *Do you have any of these risk factors?* *Does anyone else in your family have any of these risk factors?*
State how diabetes is diagnosed.	V. Diagnosis of Diabetes A. When to test 1. All adults should be tested for diabetes at age 45 and above and if normal, repeat testing at three-year intervals 2. Testing for diabetes at younger age if at risk for development of diabetes B. National Diabetes Data Group Criteria for Diagnosis of Diabetes Mellitus in Non-pregnant Adults 1. A fasting plasma glucose (FPG) value ≥126 mg/dl confirmed by repeat testing 2. A casual plasma glucose (taken at any time of the day without regard to time of last meal) ≥200 mg/dl with classic symptoms (polyuria, polydipsia, and unexplained weight loss) 3. A 75-g oral glucose tolerance test (OGTT) value of ≥ 200 mg/dl in the two-hour plasma glucose	Discussion: *How did you learn you had diabetes?*

	sample C. Oral Glucose Tolerance Test (OGTT) 1.Procedure a.Performed in outpatient setting b.Ingest carbohydrate preparation c.Screen for medications that may raise blood glucose d.Monitor blood glucose at regular intervals for 2 hours D. Use of A1C for Diagnosis 1.Some diabetes experts are: a.Recommending the use of the A1C test for diabetes diagnosis b.Encouraging professional organizations to consider the use of A1C for diagnosis E. Diagnosis of Pre-diabetes 1.Fasting plasma glucose is 100-125 mg/dl 2.Glucose value is >140 mg/dl but <200mg/dl in the 2-hour plasma glucose sample of a 75-g OGTT	
State the recommended blood glucose goals.	VI. Blood glucose goals (non-pregnant adults) A. Whole blood 1.Preprandial: Normal: <100 mg/dl Goal: 80-120 mg/dl	

	Additional Action: <80/>140 mg/dl 2.Bedtime: Normal: <110 mg/dl Goal: 100-140 mg/dl Additional Action: <100/>160 mg/dl B. Plasma values 1.Preprandial: Normal: <110 mg/dl Goal: 90-130 mg/dl Additional Action: <90/>150 mg/dl 2.Bedtime: Normal: <120 mg/dl Goal: 110-150 mg/dl Additional action: <110/>180 mg/dl C. Hb A1c Normal: <6 Goal: <7 Additional Action: >8	
Explain the importance of blood glucose control for prevention of diabetes complications.	D. Reasons for goals 1.Less likely to get acute complications 2.Less likely to get chronic complications 3.Well being E. Personal blood sugar goals may be different from recommended blood sugar goals depending on a variety of factors. See *Monitoring Session.*	Handout: *Control Your Diabetes—For Life* Handout: *Normal Blood Glucose and Insulin Levels* Discussion: *Have participants write down their blood glucose goals.*
List the components of diabetes care.	VII. Components of diabetes care A. The components of diabetes care include self-care behaviors, the diabetes management/care plan and visits with the health care team.	

	B. The person with diabetes is at the center of diabetes care C. Benefits 1. Team resources for support 2. Planned care 3. Focused visits 4. Standards followed 5. Blood glucose controlled 6. Other risks controlled 7. Complications reduced 8. Quality of life improved	
Identify self-care behaviors.	D. Self-care Behaviors 1. AADE7™ a. Healthy eating b. Being active c. Monitoring d. Taking medication (if used) e. Problem-solving f. Healthy coping g. Reducing risks E. Diabetes Management/Care Plan 1. The diabetes care plan is the written guide for each person with diabetes to take action for his/her diabetes care. a. It includes the meal, physical activity, monitoring, medication and other plans b. The diabetes care team, including the person with diabetes, makes this plan together	*Discussion:* *What self-care practices are you doing now?* Handout: AADE7™ Discussion: *What is your current diabetes care plan…meal plan?… physical activity plan?...medication plan?* Handout: *Diabetes Management/Care*

	c.The plan is based on the individual's needs and will change over time 2.Meal plan a.Appropriate amounts of carbohydrate (CHO), protein, and fat provided through a meal plan designed especially for the individual b.Appropriate food in appropriate amounts and at intervals that will balance with insulin or oral glucose lowering medications to maintain target blood glucose levels c. Appropriate foods and amounts help to achieve and maintain reasonable weight d.Appropriate foods and amounts provide nutritional needs e.Appropriate foods and amounts normalize blood fats which minimizes risk for cardiovascular disease 3.Physical activity plan a.Maintains body weight, lowers blood glucose, decreases insulin resistance b.Physical activity has the same beneficial effects in persons with diabetes as for those without diabetes c.Physical activity will usually lower blood glucose in well regulated diabetes d.Consistent physical activity at a comfortable level is the aim	*Plan*

State the relationship of food, activity, medications (if used) to blood glucose levels.	4.Monitoring plan a.Blood glucose records help the person with diabetes and the health care team make changes for blood sugar control 5.Medication plan a.Helps with increasing available insulin or decreasing insulin resistance b.Insulin works to lower blood glucose Combinations of types of insulin and multiple injections are used to provide more stable blood glucose levels throughout the day and to provide peak action when meals are eaten c.Oral glucose lowering medications stimulate the pancreas to produce more insulin, increase sensitivity to insulin, alter release of excess glucose from the liver, or alter the ability to absorb carbohydrates 6.Other plans a.Lowering risks for health problems b.Coping c.Problem solving 7.Balancing diabetes care plan a.A balance of food, physical activity, and medications is needed to control blood glucose; the person is at the center with diabetes self-care	

	F. Visits with the health care team 1.Assistance with planning a.meals and snacks b.physical activity c.medication d.monitoring e.sick days f. handling feelings/stress in healthy ways 2.Care for diabetes a.physical examination b.foot exam c.eye exam d.dental exam e.A1C f. other blood tests g.urine tests h.immunizations i.adjusting diabetes management/care plan 3. Care for other health needs a.high blood pressure b.high blood lipids c.depression d.contraception e.tobacco/alcohol/ drug cessation VIII. The care team and resources A. Individual's rights to care 1.Patient Bill of Rights	Discussion: *How often do you see your health care team? What happens during your visit(s)?* Handout: *My Personal Care Card* Handout: *Local Agency Patient Bill of Rights*
Describe his/her		

responsibility in care and how to use the health care and support system to meet care needs.	2.Equal partner in care B. Individual's responsibility in diabetes care 1.Make regular planned follow-up appointments with educators and clinicians 2.Keep appointments—preventive and illness 3.Take monitoring records to appointments 4.Describe symptoms well 5.Discuss questions, problems, and concerns and record ideas/actions 6.Discuss behavior change goals 7.Learn lab values and record results 8.Understand the benefits and risks of treatment, including medications 9.Understand what the care team is saying; give medications and treatments a chance to work	Discussion: *What are some of your responsibilities in your diabetes care?* Role play: *Communication with health care team*
State ways s/he can participate in lifelong learning about diabetes.	10.Seek ongoing education and information a.Education is not a one time event b.Talk with people with diabetes c.Talk with a diabetes educator d.Read about diabetes e Visit Internet sites f.Watch diabetes videos g.Attend diabetes education classes h.Attend diabetes support group i.Attend community diabetes events. 11.Learn standards of care and clinical practice recommendations and request your health care team follows them 12.Know how to get help in emergencies a.Physician office	Discussion: *What are some of the learning resources you use?* Handout: *Diabetes Resource List* Handout: *My Personal Care Card* *Clinical Practice Recommendations*

	b.Family/friend c.Neighbor d.Rescue e.Call button 13.Carry identification regarding diabetes B. Health care team responsibilities Team includes educators and clinicians, such as physician, nurse practitioners, physician assistants, dietitian, nurse educator, pharmacist, home health nurse, care managers, behavioral health professional, social worker, physical therapist, podiatrist, ophthalmologist, optometrist, dentist, etc. 1.Provide appropriate information and guidance 2.Mutually set and agree upon behavior change goals with individual C. Access to care	Handout: *My Local Emergency Numbers* *Diabetes Identification Resources* Discussion: *Discuss where to post emergency information at home.* Discussion: *What are some of your health care teams responsibilities in your diabetes care?*
Identify issues of self-advocacy in dealing with legislation, insurance, the health care system, employment, and other related issues.	1.Legislation a.Advocating for patient rights b.Advocating for increased diabetes research and community diabetes resources c.Contact local legislator with concerns about diabetes issues d.Contact American Diabetes Association e.Read monthly diabetes publications 2.Discrimination a.Health insurance b.Employment c.Contact ADA Affiliate for legal advice 3.Reimbursement for diabetes medication and	Handout: *Local Legislators Resource List* *Internet Resource List* *Publications Resource List* *Organizations Resource List* *Medicare/Medicaid Reimbursement Information* Discussion: *Share any legislative efforts involved in*

	supplies a.Check with insurance carrier to determine coverage for diabetes medications and supplies b.Request physician to order diabetes supplies with prescription to assist with coverage c.Lobby for legislation for assistance in reimbursement of diabetes education, medication and supplies D. Resources 1.Community diabetes resources a.Local ADEF/DSMT Program b.American Diabetes Association Affiliate c.State Diabetes Control Program d.Diabetes Support Groups 2.Other community resources a.Weight management programs b.Exercise programs/facilities c.Community libraries d.Hospital/agency social services e.Care managers f.Local health department g. Public Health Nursing h.Town office i.Legal Aid j.Area Agency on Aging k.Meals on Wheels l.Food pantries m.Behavioral health counselors 3.Print and media resources for diabetes management	Role play: *Calling legislator with questions/concerns* *Applying for a job or drivers license* Handout: *Diabetes Resource List* Discussion*:* *Wellness, social, information, and economic resources and how to access as appropriate.*

	a.Magazines (See *Appendix*) b.Reference books c.Videos d.Audiotapes e.Cookbooks f.Internet (See *Appendix*) 4.Companies that manufacture and sell diabetes supplies	Handout: *Resource Guide*

Behavioral Objective	**Instructor's Notes**
Make a plan for one thing s/he will do for diabetes care. Make a plan for one way s/he will participate in lifelong learning about diabetes.	Review behavioral objectives. Making changes, such as taking care of diabetes and lifelong learning about diabetes, is easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps Assist participants with applying concepts learned in the session to his/her personal diabetes care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it.

	Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab 9: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.

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Addressing Psychosocial Issues and Concerns

Introduction

The purpose of this session is to describe strategies for addressing psychosocial issues and concerns.

The emotional health of the individual with diabetes is key to his/her ability to manage diabetes. This session is designed to help participants look at their feelings and related stress and how this affects their ability to manage their diabetes.

Diabetes educators may work with people who have mental illness such as anxiety, depression, bipolar disorder, schizophrenia and other illnesses. Many medications used to treat mental illnesses, such as anti-depressants, mood stabilizers, and anti-psychotic drugs, have a side effect of weight gain. This may increase risk for type 2 diabetes and make diabetes more difficult to control for those who have it.

People who have mental illness are sometimes met with stigma. They need kindness, dignity, and respect. It is important that diabetes educators work as a team with the participant with mental illness and their physician, and mental health professional for optimal care.

Care of diabetes is an added burden for many. However diabetes can be controlled.
Hope and determination can be strong tools in managing diabetes.
Having a caring, compassionate, knowledgeable diabetes educator can make a difference in the lives of many people with diabetes.

Learning Objectives

Survival Level:

- Verbalize that he/she has diabetes.
- Identify his/her feelings related to diabetes.
- Describe coping strategies he/she can use for negative feelings and stress.
- Identify support people and how they can help with diabetes care.

Intermediate/Advanced Level:

- Identify experiences, successes and problems coping with diabetes.
- Identify the frequent occurrence of depression in people with diabetes.
- Identify ways diabetes affects family.
- Identify feelings and stress family members may experience.
- State in his/her own words what stress is.
- Explain the body's response to stress.

- State ways increased stress affects diabetes.
- State how self-care may be affected by chronic stress.
- Identify stressful situations/factors in his/her life.
- Explain how having a chronic disease like diabetes may contribute to stress.
- Acknowledge that a mental health professional may help with coping with negative feelings and stress.

Behavioral Objectives

Make a plan for one way he/she will cope in a healthy way with negative feelings and stress.

Evaluation Plan

Evaluation includes achievement of:

- Learning objectives identified in the education plan
- Participant-defined behavioral goals and objectives
- Education program goals and objectives

Materials List

Videos: or DVDs

Emotional Aspects of Diabetes (MF/AADE)

Handouts/Visuals:

Please access appropriate handouts on stress on the internet:
Topics may include:
Relaxation techniques
Benefits of laughter
Coping with stress

Websites for Information on Diabetes:

American Psychiatric Association – **www.psych.org**
Depression and Bipolar Support Alliance – **www.dbsalliance.org**
National Alliance for Mentally Ill (NAMI) - Maine – **www.NAMI-ME@nami.org**
National Institute of Mental Health (NIMH) – **www.nimh.nih.gov/tools/helpusing.cfm**
National Mental Health Association – **www.nmha.org/infoctr/factsheets/index.ctm**

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Addressing Psychosocial Issues and Concerns

Learning Objective	Content	Instructor's Notes
Verbalize that s/he has diabetes. Identify experiences, successes and problems coping with diabetes. Identify his/her feelings related to diabetes. I	I. Introduction A. Review diabetes self-care behaviors, including healthy coping 2. Lifestyle adjustment A. Participant discussion of changes that have occurred as a result of having diabetes 1.Feelings about having diabetes 2.Changes in daily routine 3.Changes in activity 4. Time spent on diabetes instead of other things 5 Changes in personal health 6. Changes in relationships 7.Effect of diagnosis on family/friends 8.Changes at work 3. Coping with a chronic disease A. Feelings related to diabetes 1.Feelings are normal and okay 2.Feelings will change 3. Feelings part of process of accepting diabetes 4.Range of feelings about having diabetes 5.Feelings about diabetes may be less intense as diabetes becomes part of life 6.Feelings never leave completely, even after	Review learning objectives. DVDs, videos, models, handouts/visuals, discussion/whiteboard/ overhead, as appropriate, such as those listed below. Discussion: *What changed in your life after you learned you had diabetes?* DVD or video: *Emotional Aspects of Diabetes* Handout: *Diabetes Concerns Assessment Form* Prompts discussion of different feelings participants' experience.

	acceptance of diabetes	
Identify the frequent occurrence of depression in people with diabetes.	2. Identification of Depression a.Symptoms of depression: ▪ Persistent sad, anxious, or "empty"mood ▪ Feelings of hopelessness, pessimism ▪ Feelings of guilt, worthlessness, helplessness ▪ Loss of interest or pleasure in hobbies and activities that were once enjoyed, including sex ▪ Decreased energy, fatigue, being "slowed down" ▪ Difficulty concentrating, remembering, making decisions ▪ Insomnia, early-morning awakening, or oversleeping ▪ Appetite and/or weight changes ▪ Restlessness or irritability ▪ Thoughts of death or suicide, or suicide attempts b. Seek an evaluation for depression as needed. People overwhelmed with sadness should tell a friend, family member, or health care worker. If patient is has thoughts of hurting self or others send immediately to physician or emergency room. 3. Stages of adaptation to diabetes 1.Not an orderly process, stages recur 2.Stage of adaptation vacillate 3.May be similar to adapting to other "losses"	Discussion: *How did/do you feel when you were told you had diabetes?* Role Play: *Role play attitudes and feelings in pairs or groups* Game: *Word Association Games* *Have participant tell what feelings the word causes: Diabetes, Pills, Insulin, Injections, Meal Plan, Exercise.* *Ask the same of any family members present. Write the response down and look for patterns or themes present.*

	4.Stages a.Disbelief or denial b. Anger c. Bargaining d. Depression e. Acceptance	Dscussion: *How do you feel now about having diabetes? What stage of adaptation are you at?*
Describe coping strategies s/he can use for negative feelings and stress.	D. .Coping strategies: 1.A person can learn healthy ways to handle feelings 2. Handling feelings in healthy ways helps: a.Make diabetes self-care part of daily routine b.Stay at blood glucose goals c.Prevent or lessen diabetes complications	
Identify support people and how they can help with diabetes care.	3. Coping strategies include: a. Sharing feelings, (anger, fear, guilt, frustration, etc) with family, friends, church, support group, diary, or mental health professional. b.Asking for help c.Identifying supports, such as family, friends, health care team, support group, behavioral health professional, social services, spiritual advisors, etc (1) Support people can help in many ways: a. Be physically active together eat healthfully together c. Listen d.Give encouragement Provide feedback Provide resources	Discussion: *What are coping strategies that have been successful for you?* Activity: *Have participants identify two support people and then role play asking them for help.*

Identify ways diabetes affects family. Identify feelings and stresses family members may experience.	E. People with diabetes may also benefit from journal writing, humor, hobbies, and physical activity. Meditation, praying, laughter, massage, visualization, reading, or going on the internet to get information or a support group. F. Some people will need financial support. Refer to food bank, soup kitchen, fuel or transpiration assistance. Health insurance or financial need should be addressed for individuals. G.. Effect of diabetes on the family A. Changes in lifestyle 1.Medication/regimens 2.Consistent decision making in daily patterns a.Meals b.Physical activity c.Sleeping B. Diabetes as an opportunity for family growth 1. Opportunity for growth 2. Increased awareness of other family member's needs and feelings 3. Family needs education to cope, understand, and be supportive. C. Tips for enlisting support l.Individuals with diabetes and family members are encouraged to discuss their feelings regarding diabetes.	Discussion: *Have any changes in lifestyle affected relationships with family/friends?* *Any problems that having diabetes has caused within the family? Problem solve.* Discussion/Role Play: *Everyone is gathered for a holiday celebration. A well-meaning relative who is serving dessert says, " Oh you can't have this." How can you respond to your relative?*

	2.Individuals and their families negotiate a plan for who is responsible for each area of diabetes care 3.Individuals and family members brainstorm ways to assist 4.Seek professional assistance as necessary D. Gather team for support 1.Physician 2.Diabetes Educators 4. Endocrinologist 5. Opthamologist 6. Podiatrist 3. Mental Health professional 7.Other health professionals	Discussion: *Allow family members to vent feelings by filling in sentences such as I have learned ____ since my wife was diagnosed with diabetes. I feel _____ since my husband was diagnosed with diabetes.*
State in his/her own words what stress is. Explain the body's response to stress. State ways increased stress affects diabetes.	V. Stress A. Definition: Stress is reaction to any change. B. Stress factors 1.Physiological factors associated with stress a.Hormonal changes causing increased blood glucose b.Increased blood pressure c.Physical symptoms d. anxiety C. Manifestations of Stress 1.Poor nutrition 2.Decreased physical activity	Discussion: *What are stressful situations for you?*

State how self-care may be affected by chronic stress. Identify stressful situations/factors in his/her life. Explain how having a chronic disease like diabetes may contribute to stress.	3.Decreased social activities 4.Decreased enjoyment of activities 5.Diminished self-care 6.Inability to sleep 7.Feelings of guilt/worthlessness/poor self-esteem 8.Self-destructive thoughts 9.Substance abuse 10.Depression 11.Anxiety disorder 12.Eating disorder	Discussion: *Have you experienced any of these physical or emotional results of stress? Which ones?*
	D. Sources of Stress 1.Physical a.Having to follow schedules daily b.Invasive procedures c.Having to change habits (eating, etc) 2.Psychological a.Peer pressure b.Cost of supplies/medication/difficulty getting health insurance c.Time commitment d.“Being different” e.Loss of control f. Daily coping g.Unknown future h.Concern about weight i. Fear of complications	Discussion: *Make two columns on a piece of paper with one column for items that cause stress that <u>can</u> be changed, and one column for items that cause stress that <u>cannot</u> be changed. Individual then can see that there are many things that cause stress that we cannot change.* Discussion: *Now that the individual has identified stress-producing situations, ask:* *What can you do when stress is building**?*** *Encourage participants to record stress reduction*
Acknowledge that a mental health counselor may help with coping with negative feelings and stress.		

Review coping mechanisms for depression. Many strategies apply to coping with stress.		*activities and post in their home.* Handouts: Each educator to locate Appropriate handouts as needed.

Behavioral Objective	**Instructor's Notes**
Make a plan for one way s/he will cope in a healthy way with negative feelings and stress.	Review behavioral objectives. Review DSME Send individual and class notes to provider. Making changes, such as coping with negative feelings and stress, is easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps Assist participants with applying concepts learned in the session to his/her personal diabetes care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it. Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab 9: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.

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Promoting Health and Behavior Change

Introduction

The purpose of this session is to assist the participant in developing a problem-solving approach to diabetes self-care and general health habits.

Behavior change and goal setting strategies are included. The instructor guides the participant with choice of realistic measurable goals that can be accomplished in gradual stages.

Learning Objectives

Survival Level:

- Identify his/her readiness to change
- Identify strategies to achieve his/her behavior change goals.
- Identify the steps in making a behavior change plan.

Intermediate/Advanced Level:

- List behaviors that may need to be changed to improve health and quality of life.
- Describe the stages of change.
- Describe the four steps in the process of change.
- Identify potential barrier(s) that may hinder progress toward achieving behavior change goals.
- Describe ways to maintain behavior changes.
- Describe characteristics of people who are successful with behavior change.
- Identify people who can support your behavior change.
- Verbalize a commitment to carry out goals.
- Identify problem-solving strategies for behavior change and maintenance.

Behavioral Objectives

- Make an action plan for one personal health goal.

Evaluation Plan

Evaluation includes achievement of:

- Learning objectives identified in the education plan
- Participant-defined behavioral goals and objectives
- Education program goals and objectives

Materials List

Videos:

Basic Skills For Controlling Diabetes (MF/AADE)
For A Change (Spectrum)

Handouts/Visuals:

AADE 7™ Self-Care Behaviors (AADE)
Behavior Change Plan (LWD)
Learn How to Change Habits (ADA)
Local Resource List (SD)
Personal Goal(s)/Behavior Change Plan (SD)
Ready to Make a Change (ADA)
Sample Goals (SD)
Sample Goal Contract (SD)
Stages of Change Chart (SD)

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Promoting Health and Behavior Change

Learning Objective	Content	Instructor's Notes
List behaviors that may need to be changed to improve health and quality of life.	I. Overview A. Review diabetes self-care behaviors, including problem-solving B. Staying healthy with diabetes usually means making some changes C. The person with diabetes knows best what those changes are D. Setting a goal for oneself can help make changes E. It can take time to make a change that will last F. Change process includes identifying current patterns of behavior, getting ready for change, learning how to change, choosing what one wants to change, and making a plan for change II. Health habits that improve quality of life with diabetes A. Well-balanced meal plan B. Regular physical activity	Review learning objectives. Videos, models, handouts/visuals, discussion/whiteboard/ overhead, as appropriate, such as those listed below. Discussion: *Brainstorm behavior participants wish to change to enhance diabetes care.* Discussion: *AADE 7™ Self-Care*

	C. Taking medication safely and as prescribed D. Regular monitoring of blood glucose E. Coping with feelings an stress in healthy ways F. Smoking cessation/reducing risks G. Preventive health care visits to providers H. Other individual habits to enhance diabetes care	*Behaviors*
Describe the stages of change.	III. Stages of behavior change A. General 1.May be at different stages for different habits 2.May want to work on changes that one is ready to make 3.Once make a change and successful with it, other changes are not so hard	
Identify his/her readiness to change.	B. Stages 1.Pre-contemplation: not considering making any changes 2.Contemplation: thinking about making changes 3.Preparation: actively planning to make a change 4.Action: making the change 5.Maintenance: incorporating new behavior into a routine	Handout: *Stages of Change Chart* *Participant completes with assistance.*

Describe the four steps in the process of change. Identify potential barrier(s) that may hinder progress toward achieving behavior change goals. Describe ways to maintain behavior changes. Describe characteristics of people who are successful with behavior change.	IV. Steps to make a change A. Acknowledge the need for change 1.Must believe it is needed 2.Deal with feelings/thoughts that get in way 3.Identify why might be resisting change B. Get ready to change—physically and mentally 1.Contract with self 2.Get information/resources/support 3.Talk to others—what works/does not work 4.Think about how change will affect life 5.Choose behavior change goals C. Take action 1.Monitor progress 2.Change environment 3.Substitute with healthy behavior 4.Role play 5.Reward self D. Achieve and maintain change 1.Learn stress management strategies 2.Visit diabetes team regularly 3.Learn to cope with relapse—revise goal V. Characteristics of people successful with behavior change A. Motivated	Discussion: *Brainstorm obstacles/aids to making and maintaining behavior changes*. *Benefits of changing versus not changing behaviors.*

	B. Hopeful they can reach goals C. Supportive friends D. Supportive health care professionals E. Realistic behavior changes F. Developed an actual plan G. Empowered participant in care	Discussion: *Examples of how small steps can lead to the accomplishment of goals*
Identify strategies to achieve his/her behavior change goals.	VI. Strategies for behavior change A. Identify readiness to change B. Determine a healthy habit to add rather than giving up one unhealthy habit C. Keep a written record of actions and progress 1. Write down new habit 2. Write down steps need to take (what you do, when you do it, what you need to do to get ready, what might get in the way of your plan) 3. Monitor progress with accomplishing it (i.e., keep records) at least every two weeks	Discussion: *Brainstorm specific strategies for making behavior changes.*

Identify people who can support your behavior change.	D. Change daily routine and environment to help eliminate cues for behavior or to support new behavior—make new habit easy to remember E. Use reminders F. Spend time with supportive people, places and things G. Make plans ahead of time to handle obstacles/barriers H. Ask for help I. Ask family/friends for support. Tell them how they can assist with behavior change J. Write a contract concerning the behavior with self, family/friends or health care team K. Determine rewards for self when short-term goal is accomplished	Discussion: *Who can give you support for your behavior change* Role play: *Ask one of your support people for assistance*
Identify the steps in making a behavior change plan.	VII. Developing a behavior change plan A. General steps 1.Identify current behavior patterns 2.Participant chooses a behavior to change 3.Participant sets behavior change goal a.A goal is something a person wants to achieve, work toward or end up at	Video: *For A Change* Handout: *Stages of Change Chart* or *Behavior Change Plan* or *AADE 7™ Self-Care Behaviors or*

	4.Mutually develop a plan a.commitment, time frame, tracking, reward 5.Problem-solve B. Types of goals 1.Long-term goal describes the desired outcome 2.Short-term goal describes the behavioral process that individuals will follow to reach the desired outcome C. Choice of goals 1.Identify goals related to diabetes and its care a.Choose SMART goals: specific, neasurable, achievable, realistic and time-specific b.Effective goal is reasonable (reflects current health and abilities and is within reach) c.Effective goal is measurable (specific about what to do and when) d.Start with what he feels ready to do and can do e.Learn what needs to be done to achieve goal f.Start with one new habit g.Identify one goal most important to work on first h.Use checkpoints to evaluate progress	*Learn How to Change Habits* *Participant completes with assistance.* Handout: *Sample Goals* Discussion: *Educator assists with goals:* *Clarify feelings* *Cost/benefits of change* *Give information* *Assure they are specific and achievable* *Provide social support and skills training* *Help with relapse prevention* *List ideas/steps on whiteboard.*
Verbalize a commitment to carry out goals.	f.Make a commitment to goal 2.Identify aspects of goals that are difficult a.Prepare for obstacles and barriers 3.Identify what could be changed to feel better about difficult aspects of goals 4.Identify appropriate time frame based on long-	Handout: *Goal Contract*

	term goal: where does he/she want to be in relation to goal in one year, six months, three months, one month and next week 5. List the benefits and costs of taking action to reach the goal 6. Identify ways to change environment at home and work 7. Identify ways family/friends can assist 8. Ask for help 9. Identify small steps or behaviors to help reach long-term goal 10. Determine how often the behavior will be tried 11. Keep track of each time new behavior is tried 12. Reward achievement of the new behavior	
Identify problem-solving strategies for behavior change and maintenance.	VIII. Problem-solving if unable to achieve goal A. Evaluate: If do well with goal, identify what helped achieve it. If did not do well, ask why B. Identify what was learned from trying to achieve behavior change: identify obstacles and ways to overcome C. Go back over steps to identify the problem clearly D. Revisit the goal: was behavior change goal too large, unrealistic, not measurable, not relevant, etc. E. Choose a modified version of original behavioral goal or entirely new goal if indicated	

	F. Reaffirm commitment and keep trying. Achievement of each small step can lead to success with achieving long-term goal	

Behavioral Objective	**Instructor's Notes**
Make an action plan for one personal health goal.	Review behavioral objectives. Choosing goals and making behavior changes are easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps Assist participants with applying concepts learned in the session to his/her personal diabetes care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it. Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.

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Nutritional Management Tab

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Nutritional Management Tab

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Nutritional Management

Introduction

The purpose of this session is to discuss nutritional management of diabetes and its importance in control of blood glucose, blood pressure, and blood lipids for optimal health and prevention and/or delay of complications.

Learning Objectives

Survival Level:

- ❑ Describe the relationship between nutrition, physical activity, and medication.
- ❑ Describe benefits of healthy eating/meal planning.
- ❑ Identify healthy eating behaviors.
- ❑ State the need for eating meals and snacks at consistent times in relatively consistent amounts.
- ❑ Identify tools for healthy eating/meal planning.
- ❑ Identify strategies to support healthy eating /meal planning.

Intermediate/Advanced Level:

- ❑ Describe feelings regarding following a meal plan.
- ❑ State the importance of healthy eating/meal planning for control of blood glucose, blood pressure and blood lipids.
- ❑ Describe the nutrition goals for individuals with diabetes.
- ❑ Explain the dietary concepts of macronutrients (carbohydrate, protein, and fat) and food groups.
- ❑ Explain the appropriate use of dietetic foods.
- ❑ List guidelines for use of alcohol.
- ❑ Describe guidelines for dining out.
- ❑ Describe meal planning and problem-solving for special occasions.
- ❑ Describe how recipes can be calculated into the meal plan.
- ❑ Identify diabetes meal planning resources.

Behavioral Objectives

- □ Make a plan for one thing s/he will do to eat for health.
- □ Demonstrate the use of two or more tools for healthy eating/meal planning.
- □ Record a day's meals and snacks on a food record.
- □ Select the types and amounts of foods to be included in meals and snacks in his/her individualized meal plan.

Evaluation Plan

Evaluation includes achievement of:

- Learning objectives identified in the education plan
- Participant-defined behavioral goals and objectives
- Education program goals and objectives

Materials List

Videos:

Diabetes and Nutrition: Changing Eating Behavior (MF/AADE)
Diabetes and Nutrition: Eating for Health (MF/AADE)
Diabetes and Weight Control: Change For a Lifetime (MF/AADE)
Introduction to Carbohydrate Counting (MF/AADE)
Putting Carbohydrate Counting Into Practice (MF/AADE)

Models:

Dietetic Foods (Actual)
Food Product Labels (Actual)
Food Products With Non-Nutritive Sweeteners (Actual)
Food Samples (Actual)
Food Samples **www.eNasco.com**(plastic); **www.nationaldairycouncil.org** (paper)
Measuring Tools (SD)
Nutritive Sweeteners (Actual)
Paper Food Models (National Dairy Council)
Photos of food servings and portions **www.eNasco.com**
Restaurant Menus (Actual)
Recipes (Actual)
Tubes of Fat/Sugar (SD)

Books:

American Diabetes Association. Month of Meals, 2002.

Campbell, A.P. Staying Healthy with Diabetes: Nutrition and Meal Planning. Joslin Diabetes Center, 2006.

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Franz, M., Reader, DL, Monk, A. Implementing Group and Individual Medical Nutrition Therapy. American Diabetes Association, 2002.

Ginsburg, Art. Mr. Food's Quick and Easy Diabetic Cooking. American Diabetes Association, 2001.

Holzmeister, L. A. The Diabetes Carbohydrate and Fat Gram Guide 3rd Edition. American Diabetes Association/American Dietetic Association, 2005.

Leontos, Carolyn and Geil, Patti. Individualized Approaches to Diabetes Nutrition Therapy. American Diabetes Association, 2002.

McCarren, Marie. Carb Counting Made Easy. American Diabetes Association, 2002.

Powers, MA. American Dietetic Association's Guide to Eating Right When You Have Diabetes. John Wiley and Sons, 2003.

Ross, T., Boucher, J and O'Connell, B. American Dietetic Association Guide to Medical Nutrition Therapy and Education. American Dietetic Association, Diabetes Care and Education Practice Group, 2005.

Satter, Ellyn. Secrets of Feeding a Healthy Family. Kelcy Press, 2008.

Warshaw, H. The Complete Guide to Carb Counting. American Diabetes Association, 2001.

Warshaw, H. The American Diabetes Association Guide to Healthy Restaurant Eating. American Diabetes Association, 2005.

Booklets/Pamphlets:

Carbohydrate Counting: Adding Flexibility to Your Food Choices (IDC)
Exchange Lists for Meal Planning (ADA, ADtA)
First Step in Diabetes Meal Planning (ADA)
Healthy Food Choices (ADA, ADtA)
Idaho Plate Method (PO Box 441, Rexburg, Idaho, 83440)
Month of Meals (ADA)
Single Topic Diabetes Resources (ADA, ADtA)

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Handouts/Visuals:

Carb Cards (carbcards@montrose.net**)**
Dietary Guidelines for Americans (consumer brochure at www.cnpp.usda.gov/dietaryguidelines.htm)
Fast Food Guide (PC)
Feelings Cards (www.feelingsfacescards.com)
Food Label (www.fda.gov)
Food Record (LWD, SD)
Helping Hands (BYLD Curriculum, www.ihs.gov/MedicalPrograms/Diabetes)
How Insulin Works (LWD)
Local Resource List (SD)
Meal Planning Resources (SD)
Mindful Eating Activity (The Last Orange on Earth –http://ces.uwyo.edu/pubs/mp112-5pdf**)**
My Personal Diabetes Care Card (NDEP, ADA, SD)
My Pyramid (www.mypyramid.gov)
Normal Glucose Metabolism (LWD)
Normal Glucose and Insulin Levels (LWD)
Nutrients in Food Groups (LWD)
Nutrition Fact Sheets for Local Restaurants (SD)
Personal Goal(s)/Behavior Change Plan (SD)
Portion Distortion (http://hp2010.nhlbihin_net/portion)
Read It Before You Eat It (www.fns.usda.gov/tn/resources/read-it.pdf)
Self-Blood Glucose Monitoring Record Book (PC, SD)
Serving Size Guide (www.mealsmatter.org/Eating for Health/Topics/Healthy-Living-Articles/Portion-Sizes.aspx)

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Learning Objective	Content	Instructor's Notes
	I. Introduction A. Review diabetes self-care behaviors, including healthy eating B. Recall one of the goals of diabetes care is glucose control C. Recall glucose control is achieved through balancing food, physical activity, medications (if needed), and other self-care behaviors D. Recall that a person with diabetes either does not have enough insulin or has insulin resistance E. Recall insulin is needed to move glucose out of the blood and into the body cells	Review learning objectives. Videos, models, handouts/visuals, computer presentations, discussion/whiteboard/ overhead, as appropriate, such as those listed below.
Describe feelings regarding following a meal plan.	II. Lifestyle adjustment A. Participant discussion of feelings that have occurred as a result of changes in food intake 1.Feelings about following a meal plan 2.Changes in daily routine regarding	Discussion: *Ask participants to share how it feels to follow a meal plan or to be in a family in which one of the members is following a meal plan. Discuss use of term "diet" versus "healthy eating/lifestyle" and the feelings both promote.*

Learning Objective	Content	Instructor's Notes
Describe the relationship between nutrition, physical activity and medication.	eating 3.Effect of meal plan in relation to family and friends B. Feelings are normal and okay 1.Range of feelings about having diabetes aids in coping 2.Instructor can encourage participants to share their feelings and acknowledge their feelings but not try to fix them 3.Discuss resources a.Buddy b.Support group c.Counselor/diabetes educator d.Registered dietitian III. Achievement of target blood glucose goals depends on balance of nutrition, physical activity and medication A. Meal planning provides appropriate food in amounts and at intervals that will balance medication and physical activity to maintain target blood glucose levels 1.Too much food can result in increased blood glucose (hyperglycemia) 2.Too little food can result in decreased blood glucose	Discussion: *Ask participants to share what eating is like now that they have diabetes.* Discussion: *Ask participants to brainstorm coping strategies for difficult food-related situations*. Discussion: *Ask participants to identify resources for support.* Video: *Diabetes and Nutrition: Eating for Health* Handout/Visual: *Normal Glucose Metabolism* Discussion: *Discuss how circulating glucose (digested food) needs the help of medication and physical activity to get into cell.*

Learning Objective	Content	Instructor's Notes
	(hypoglycemia) B. Physical activity 1.Too much physical activity without supplemental food can result in decreased blood glucose (hypoglycemia) 2.Too much physical activity without enough insulin can result in increased blood glucose (hyperglycemia) 3.Not enough physical activity can result in increased blood glucose hyperglycemia) C. Medication 1.Not enough medication can result in increased blood glucose (hyperglycemia) 2.Too much medication without supplemental food can result in decreased blood glucose (hypoglycemia) D. Nutrition as therapy 1.Nutrition is therapy – each person has individual meal plan just as physical activity and medication (if needed) are prescribed for individuals 2.Nutrition therapy addresses	Handout: *How Insulin Works* *Normal Glucose and Insulin Levels* *Dietary Guidelines for Americans* My Pyramid Discussion: *Compare American Diabetes Association guidelines with guidelines from American Heart Association, American Cancer Society*

Learning Objective	Content	Instructor's Notes
	individual nutritional needs, taking into consideration personal and cultural preferences and lifestyle while respecting the individual's wishes and willingness to change	*and Dietary Guidelines for Americans/My Pyramid. Promote that this is a balanced, healthy meal plan for everyone.*
Describe the benefits of healthy eating/meal planning.	IV. Benefits of Healthy Eating/Meal Planning A. Achieve nutrition goals 1.Maintain blood glucose as near normal as possible 2.Achieve optimal serum lipid levels and blood pressure 3.Attain and maintain healthy body weight 4.Provide adequate nutrition for normal growth and development in children and adolescents 5.Provide adequate nutrition during pregnancy and lactation 6.Achieve and maintain optimal blood pressure B. Control glucose, lipids, and blood pressure 1.Prevent or delay acute and chronic complications 2.Attain overall health through optimal nutrition C. Other benefits 1.Feel well	
State the importance of healthy eating / meal planning for control of blood glucose, blood pressure, and blood lipids.		Discussion: *Ask participants if they know their current blood glucose, lipid and blood pressure; ask how they keep track of these levels.*

Learning Objective	Content	Instructor's Notes
	2.Have more energy 3.Perform well 4.Prevent other health problems a.Heart disease b.Cancer c.Kidney disease V. Healthy Eating Behaviors	*Handouts:* *SBGM Record Book* *My Personal Diabetes Care Card* Discussion: *Ask participants to brainstorm reasons to eat well and control their glucose, lipids, and blood pressure.*
Identify healthy eating behaviors.	A. Mindful eating B. Eating healthy portions Portion sizes and timing of food intake directly affect blood glucose levels 1.Portion sizes a.The more food that is consumed at one time the more insulin is needed b.Eating approximately the same meal and snacks aids achievement of stable blood glucose c.Skipping meals contributes to erratic blood glucose levels	Models: *Food Models/Samples* Handout: *Mindful Eating* Activity: Models: *Have participants "guess" the volume (measurement) of specific foods using food models or actual foods.* Handout: *Portion Distortion* *Helping Hands Serving Size Guide* Models: *Food Servings and Portions (Actual or Photo)* *Measuring Tools*
State the need for eating meals and snacks at consistent times in relatively consistent amounts.	C. Eating regular meals and snacks/ . Timing of food intake and medication 1.Meals and snacks should be eaten at about the same time every day 2.Meals and snacks should be	Discussion: *Ask participants if they have skipped a meal and what happened.* *Discuss hypoglycemia and treatment as appropriate.*

Learning Objective	Content	Instructor's Notes
	spaced evenly throughout the day 3.Optimum blood glucose levels can result if medication is timed appropriately to match food intake D. Eating a variety of food E. Eating more high-fiber food F. Drinking more water G. Eating less high-fat food H. Eating less high-sugar food I. Eating less fast food VI. Nutrition goals for individuals with diabetes A. Goals for type 1 1.Conventional therapy a.Synchronize food with insulin b.Eat consistently, adjust insulin 2.Intensive therapy a.Integrate insulin into lifestyle b.Adjust insulin to compensate for lifestyle B. Goals for type 2 1.Strategies to achieve optimum	Discussion: *Ask participants when they take their medication and when they exercise* *Discuss appropriate timing of meals in relation to medication and exercise.* Handout: *MyPyramid* Models: *Tubes of Fat/Sugar* Discussion: *Ask participants to share examples of any of these strategies they are using to achieve optimum blood glucose (type 1 or type 2).*
Describe the nutrition goals for individuals with diabetes.		

Learning Objective	Content	Instructor's Notes
	blood glucose control a.Learn new behaviors b.Restrict calories for moderate weight loss (5-10 kg or 5% weight loss may improve diabetes control) c.Improve food choices (portion control) d.Space meals e.Modify fat intake f.Increase physical activity g.Monitor blood glucose, add medication, if necessary h.Eat less sweets	
Explain the dietary concepts of macro nutrients (carbohydrate, protein, fat) and food groups.	VII. Dietary Concepts – Nutrients A. Nutrients – all foods contain nutrients which effect blood glucose 1.Carbohydrate (CHO) 2.Protein (PRO) 3.Fat (FAT) 4.Vitamins (VIT) 5.Minerals 6.Water B. Calories 1.Nutrients that provide calories are CHO, PRO, FAT 2.Vitamins, minerals and water are essential for life but do not provide	Handout: *Nutrients in Food Groups* Models: *Food Models* Discussion: *Using food models or actual products, ask participant to determine whether the food is primarily carbohydrate, protein, fat, or a combination of nutrients.*

Learning Objective	Content	Instructor's Notes
	calories nor effect blood glucose C. Carbohydrate 1.Starch and sugar 2.Body uses CHO for energy and needs more of this than any other nutrient 3.Foods containing CHO a.Starches – breads, cereals, pasta, rice b.Fruits c.Vegetables d.Milk 4.Individualized CHO Intake a.Percentage of calories from CHO is individualized (1)Based on individual's eating habits (2)Based on glucose level goals (3)Based on lipid level goals D. Protein 1.Protein breaks down into amino acids, some of which are converted to glucose, if needed 2.Body uses protein to build and repair muscles, skin and every cell in body 3.Foods containing protein a.Meat, fish, eggs, poultry	

Learning Objective	Content	Instructor's Notes
	b.Peanut butter c.Cheese d.Milk e.Tofu 4.Moderate protein intake a.8g/kg body weight for – adults or 10-20% of total calories from protein b.Historical perspective – transition from liberal to moderate intake c.Concern of liberal protein intake in relation to diabetic nephropathy E. Fat 1.When fat is broken down very little is converted to BG and contributes little to rise in blood glucose 2.Fat is an essential nutrient that provides energy, maintains healthy skin and carries fat soluble vitamins A, D, C and K 3.Too much fat increases risk for heart and blood vessel disease 4.Fat is high in calories. Foods with fat contain more calories per bite than foods without fat 5.Foods containing fat a.Butter, margarine, oil, mayonnaise, salad dressing b.Sour cream, cream cheese, coffee creamer, milk – except	

Learning Objective	Content	Instructor's Notes
	non-fat milk c.Bacon and dessert items (baked goods, ice cream) 6.Amount a.Percent fat recommendations vary with individuals b.Keep saturated fat under 7% of total calories c.Up to 10% total calories can come from polyunsaturated fats d.Monounsaturated fats can provide up to 20% of total calories e.No more than 200 mg cholesterol daily f.Transfat is to be avoided g. Omega – 3 fatty acids have been found to be beneficial in reducing the incidence of heart disease	
Identify tools for healthy eating/meal planning.	VIII. Tools for Healthy Eating/ An individualized meal plan option for each participant is determined after a nutrition assessment by the dietitian A. Food Pyramid 1.The Food Pyramid describes: a.Each food group b.Foods in each food group c.The amount of food in one serving	Discussion: *Ask participants to share the details of their meal plan. Discuss the fact that each person's meal plan is different from another persons.* Handout: *MyPyramid* *Helping Hands* *Serving Size Guide* *Food Label*

Learning Objective	Content	Instructor's Notes
	d.The number of servings from each food group needed each day 2.Messages in the food pyramid: a.Each color stripe represents a food group; eat each color every day b.The stripes are wide at the bottom and narrow at the top; choose foods from the wide end of the stripes more often and from the narrow end less often B. Portion Guides 1.Measuring tools a.Cups, spoons, rulers and scales 2.A person's own hands a.Estimate healthy portions using one's own hands 3.Plate and placemat method a.Idaho plate method b.Nutrition placemat 4.Serving size guides a.Estimate healthy portions by using everyday objects as comparisons C. Food Label 1.Food label found on all food packages 2.Food label includes food facts	*Read It Before Your Eat It* Models/Activity: *Using food models/samples and plates* *Have participants plan a meal using the Food Pyramid, Portion Guides and the Food Label.* Pamphlet: *First Step in Diabetes Meal Planning* Activity: *Have group plan a meal using this method. Use for individual meal planning as appropriate.*

Learning Objective	Content	Instructor's Notes
	(nutrition facts)that can help with choosing healthy portions, including: a.Serving size b.Servings per container 3.Encourage to find food label, read it, and think about food facts before making food choices	
	D. The First Step in Diabetes Meal Planning (American Diabetes Association/ The American Dietetic Association) is a tri-fold brochure which opens into an 11 X 18 inch poster of the diabetes food guide pyramid 1.Provides basic diabetes meal planning guidelines including a "Here's How You Do It" section 2.Includes behavior change tips for each group as well as general food examples and serving sizes 3.Intended audience a.Newly diagnosed clients with diabetes b.Clients with diabetes who need simple guidelines or tips for planning meals	Pamphlet: *Idaho Plate Method* Activity/Models: *Using food models/samples and plates, have group plan a meal using the Idaho Plate Method. Use for individual meal planning as appropriate.* Pamphlet: *Healthy Food Choices* Activity: *Have group plan a meal using this method. Use for individual meal planning as appropriate.*
	E. Idaho Plate Method 1.This approach illustrates what a low	

Learning Objective	Content	Instructor's Notes
	calorie, low cholesterol meal looks like 2.Poster contains sample meal plan; shows how much space foods should occupy on plate 3.Vegetables occupy ½ of plate, starch ¼ of plate, and protein ¼ of plate. Dairy and fruit on side 4.Intended audience: a.Clients who need simple guidelines b.Newly diagnosed clients	
	F. Healthy Food Choices (American Diabetes Association/ The American Dietetic Association) 1.Simplified version of American Dietetic Association (ADA) Exchange System 2.Does not include expanded or lengthy list of foods 3.Useful in initial stages of diabetes education 4.Intended audience a.Newly diagnosed clients with diabetes b.Clients who need simple guidelines or tips for planning meals 5.Focuses on reducing intake of fat, salt, sugar and increasing intake of	Booklet: *Month of Meals* Discussion: *Explain how menu cycles work.* *Use for individual meal planning as appropriate.*

Learning Objective	Content	Instructor's Notes
	high fiber foods G. Menus 1.The American Diabetes Association, the American Dietetic Association, and others have developed specific menu cycles that can be used for type 1 or type 2 diabetes. (i.e. ADA's *Month of Meals)* 2.Menus are very specific and are generally easy to follow 3.Designed for participants who: a.Have little experience with meal planning and do not currently have a healthy eating plan b.Want to be told what and when to eat c.Have difficulty making or limiting food choices H. Modified Food Records 1.Participant's food record can be used and modified to achieve healthier results, if necessary 2.Modified food record can be used as a nutritional plan 3.Approach most probably appropriate for type 2 diabetes, but can also be used with people with type 1diabetes	Handout: *Food Record* Discussion: *Explain how modified food records work.* *Use for individual meal planning as appropriate.* *Ask what modifications participants made in their meal plan using this method.* Booklet: *Exchange Lists for Meal Planning* Discussion: *Explain how exchange systems work.* *Use for individual meal planning as appropriate.* *Have group plan a meal using this method.*

Learning Objective	Content	Instructor's Notes
	I. Exchange Lists 1.Clients are instructed to select portion controlled servings at each meal from six food groups: starch, vegetable, fruit, milk, meat, and fat 2.Can be used with clients with type 1 or type 2 diabetes 3.Used to emphasize need for consistency in timing of food intake and to identify the amount of food to be eaten at meals while providing flexibility 4.Used to teach caloric, carbohydrate, and fat value of foods 5.Clients who desire or need structured meal planning guidance and are able to understand complex detail are best suited to using exchange lists J. Counting approaches 1.Calorie counting a.Provides client with specific daily calorie limit b.Client keeps track of calories eaten and looks up caloric values in reference book c.Most appropriate for obese persons with type 2 diabetes 2.Fat Counting	Discussion: *Explain counting approaches.* *Use for individual meal planning as appropriate.* Activity/Models: *Have group plan a day's menu with food models.* Discussion: *Ask participants using this approach to share how many calories, fat grams, or CHO grams they have at each meal and how they interpret it for their individual meal plan* Videos: *Introduction to Carbohydrate Counting* *Putting Carbohydrate counting Into Practice* Booklet: *Carbohydrate Counting: Adding Flexibility to Your Food Choices* Activity: *Use Carb Cards to plan meals and snacks based on participants' individual meal plans.* Activity/Models:

Learning Objective	Content	Instructor's Notes
Explain the appropriate use of dietetic foods.	a. Provides client with specific daily allowance of fat grams to be spent as desired b. Most appropriate for obese persons with type 2 diabetes c. Clients are given advice on balanced intake of carbohydrate and protein as necessary 3. Carbohydrate Counting a. Specific amount of carbohydrate is established for client at each meal and snack based on food preferences, lifestyle and appropriate carbohydrate level b. Plan presumes that carbohydrate has most significant effect on blood glucose levels c. Helpful for persons with diabetes who desire assistance with achieving consistency of food consumption 4. Carbohydrate Counting: Carbohydrate/Insulin Ratios a. Carbohydrate/Insulin Ratios are the determinant of how much short-acting insulin is needed to work with carbohydrate consumed b. Appropriate for clients with type 1 diabetes who are on insulin pump or taking short acting insulin before each meal	*Use food models or real food for participants to select menus to match their individual meal plan.*

Learning Objective	Content	Instructor's Notes
	c.Methodologies (1)Carbohydrate gram method – matches units of insulin to grams of carbohydrate. Ideal for clients taking smaller doses of insulin (2)Carbohydrate choice method – matches units of insulin to carbohydrate choices. This method presumes that one carbohydrate choice equals 15 grams of carbohydrate. Exchange portions can be converted to carbohydrate choices using this method IX. Fiber A. Increased fiber intake is recommended for people with diabetes B. Daily fiber intake of 14g/1000kcal is recommended X. Dietetic foods A. Free foods – any food or drink that contains less than 20 calories per serving or less than 5 g CHO per serving	Discussion: *Ask participants to bring in any "dietetic foods" they may use and discuss how they fit in meal plan.* Activity/Models: *Compare label of dietetic candy bar and regular candy bar – noting the similar calorie, CHO and fat content.*

Learning Objective	Content	Instructor's Notes
	1. Foods with a serving size should be limited to three servings spread throughout the day 2. Foods listed without a serving size can be eaten "ad lib" B. Dietetic food – any food that contains an ingredient that has been altered (i.e. low sodium food). A dietetic food is NOT necessarily a "free food" C. No dietetic foods or special products are needed in diabetes meal plan, although alternative sweeteners, diet soft drinks, low-fat margarine, etc. may make the plan more enjoyable and easier to follow D. Nutritive sweeteners 1. Sucrose a. Evidence shows that including sucrose in controlled amounts in meal plan does not impair blood glucose control b. Foods with sucrose must be substituted for other CHO and not simply added to meal plan c. Consider the nutrient and presence of other nutrients, i.e. fats 2. Fructose a. May cause a smaller rise in	Discussion: *Ask participants to discuss products they may consume with fructose and how they fit them in meal plan.* Models: *Show samples of products made with sugar alcohols sweeteners.*

Learning Objective	Content	Instructor's Notes
List guidelines for use of alcohol.	plasma glucose than sucrose or other starchy foods b. May offer an advantage as a sweetening agent c. Potential adverse effects on serum cholesterol and LDL therefore those with dyslipidemia may need to avoid 3. Polyols – sorbitol, mannitol, xylitol, isomalt, maltitol, hydrogenated starch hydrolsates a. Provide 2 kcal/g b. May have laxative effect if eaten in large quanity (especially sorbitol and mannitol) c. No specific advantage over other nutritive sweeteners 4. Other nutritive sweeteners – corn syrup, fruit juices, fruit concentrate, honey, molasses, dextrose, maltose a. No apparent advantage or disadvantage over sucrose with respect to glycemic response or calorie content E. Nonnutritive sweeteners 1. Sources – saccharin, aspartame, acesulfame K, sucralose, stevia 2. Acceptable Daily Intake (ADI) determined by Food and Drug Administration (FDA)	Models: *Show samples of products made with nonnutritive sweeteners and discuss how they would fit in meal plan.*

Learning Objective	Content	Instructor's Notes
	3. Average intake for all nonnutritive sweeteners is much less than ADI XI. Alcohol A. Metabolism of alcohol in body 1. Occurs in liver 2. Does not contribute to elevated glucose levels 3. Does not require insulin 4. Minimizes the production and release of glucose 5. Contributes to fat stores if calories are not used as immediate energy B. Effects of alcohol 1. Worsens some complications 2. Increases serum triglyceride 3. Seems to maximize the effect of insulin 4. Interacts with some oral agents and other drugs C. Guidelines for use of alcohol 1. Discuss the use of alcohol with physician and health care team a. Oral hypoglycemia agents-(chlorpropamide) precautions (1) Deep flushing, nausea, rapid heart beat and impaired speech (2) Hypoglycemia	Discussion: *Ask participants: Do you drink alcohol?* *If so, ask how do you fit it into meal plan?* Discussion: *Share case study of an individual with type 1 diabetes who was thought to be "intoxicated" but was experiencing hypoglycemia after a*
Describe guidelines for dining out.		

Learning Objective	Content	Instructor's Notes
	b.Exogenous insulin precautions (1)Hypoglycemia (2)Effects of alcohol may induce hypoglycemia risk for several hours after drinking 2.Drink in moderation – limit to 2 drink "equivalents". One equivalent equals 12 oz. beer, 5 oz. wine, 1 ½ oz. distilled alcohol 3.If weight loss is a goal, alcohol will contribute to total caloric intake, undermining the efforts toward weight loss 4.Guidelines for insulin users a.Limit to two drink equivalents per day b.Drink only with food c.Do not cutback on food d.Abstain if there is a history of alcohol abuse and during pregnancy and lactation e.Carry a card or wear an identification identifying the persons as having diabetes 5.Guidelines for noninsulin users a.Substitute for fat calories b.Limit to promote weight loss or maintenance c.Limit if triglycerides are elevated d.Abstain if there is a history of alcohol abuse and during	*couple of drinks with no food.* Handout: *Nutrition Fact Sheets for Local Restaurants* Activity/Models: *Bring in menus from local restaurants and ask participants to select meals based on their individual meal plan.* *Have a pot luck meal or go thru cafeteria line and have participants select meal based on their plan.* Handout: *Fast Food Guide*
Describe meal planning and problem - solving for special occasions. Describe how recipes can be calculated into the meal plan.		

Learning Objective	Content	Instructor's Notes
Identify strategies to support healthy eating behaviors/meal planning.	pregnancy and lactation XII. Guidelines for dining out A. Timing (particularly important if taking insulin or oral agents) and preplanning of meals B. Suggestions for healthy food choices C. Guidelines for use of alcohol D. Estimating portion sizes E. Handling special requests F. Calculating exchanges, calories, carbohydrates or fat grams G. Fast foods XIII. Special occasions A. Ideas for holidays B. Ideas for birthdays C. Use of "special occasion" foods XIV. Calculating labels and recipes	Discussion: *Ask participants to share ideas for foods they serve on special occasions and how the foods fit in their meal plan.* *Ask participants to describe any unusual or ethnic food that they have incorporated into meal plan.* *Ask participants to bring in labels of products they use and discuss how product fits in meal plan.* Activity/Models: *Ask participants to bring in favorite recipes and calculate exchanges, calories, carbohydrate etc.* Activity/Discussion: *Take a supermarket tour and discuss how various foods can fit in meal plan.* Discussion: *Ask participants to brainstorm behavior change strategies that help them manage their diabetes.* Handout: *Mindful Eating Activity*

Learning Objective	Content	Instructor's Notes
	A. Guidelines for label reading B. Recipe calculation 1.Calculating exchanges 2.Calculating calories 3.Calculating carbohydrates 4.Calculating fat grams 5.Healthy food preparation suggestions to reduce fat, sugar and salt and increase fiber XV. Strategies for Behavior Change A. Mindful eating 1.Learn to distinguish between hunger and appetite 2.Slow rate of eating B. Add helpful cues C. Respond in a healthier way D. Build a new healthier habit 1.Learn to develop realistic goals 2.Make small changes one at a time; achieve new habit then try another strategy 3.Learn to break behavior chains E. Keep food records to identify both	See Tab 9: *Promoting Health and Behavior Change*

Learning Objective	Content	Instructor's Notes
Identify diabetes meal planning resources.	healthy and unhealthy habits as well as environmental triggers F. Identify and develop support systems 1.Spend time with people who make healthy food choices 2. Ask for help G. Write and sign a contract with self and/or registered dietitian H. Avoid /limit external cues (triggers) to eat 1.Avoid shopping when hungry 2.Shop from a list 3.Serve from the stove 4.Keep foods out of sight 5.Keep problem foods out of the house I. Participate in regular physical activity, as appropriate J. Plan meals and snacks ahead of time K. Use positive self-talk L. Learn relaxation techniques M. Learn assertiveness skills	Activity: *Practice positive self-talk.* *Practice relaxation techniques.* *Role play saying "no"* Handout: *Meal Planning Resources* *Local Resources List* Discussion: *Ask participants to share resources they have found helpful.*

Learning Objective	Content	Instructor's Notes
	N. Identify non-food rewards/incentives O. Get community support P. Use trustworthy sources of information XVI. Resources A. Libraries B. American Diabetes Association membership C. Support groups D. Exercise facilities E. Weight management programs F. Web sites (See *Appendix*) G. Print resources (See Materials List: Books)	

Behavioral Objective	**Instructor's Notes**
Make a plan for one thing s/he will do to eat for health.	Review behavioral objectives. Making changes, such eating for health, is easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps
Demonstrate the use of two or more tools for healthy eating/meal planning. Record a day's meals and snacks on a food record.	Assist participants with applying concepts learned in the session to his/her personal diabetes care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it. Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.
Select the types and amounts of foods to be included in meals and snacks in his/her individualized meal plan.	*Have participants select foods and amounts appropriate for their meal plan* *a. ask a participant to share meal plan, then ask group to make menus suggesting specific foods and amounts* *b. have participants select their meal plan from food models and ask them to share with group their reasons for selection* *c. plan a class around meal time and have participants select their meal utilizing their meal plan from cafeteria line or from menu*

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Physical Activity Tab

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Physical Activity Tab

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Physical Activity

Introduction

The purpose of this session is to emphasize the importance of physical activity as an essential component of diabetes self-management and to provide information for safe and effective physical activity.

Learning Objectives

Survival Level:

- List benefits of physical activity.
- Describe strategies to follow his/her physical activity plan.
- Describe ways she/he can stay safe when physically active.

Intermediate/Advanced Level:

- Describe his/her perceptions of physical activity.
- Describe his/her feelings about participating in regular physical activity.
- Describe the differences between aerobic and anaerobic activity.
- Define intensity in his/her own words.
- Describe how physical activity affects blood glucose.
- List the physical activity guidelines for adult Americans.
- Identify strategies to handle barriers to physical activity.
- List signs indicating the need to stop activity and consult a health care provider.
- Describe signs and symptoms of hypoglycemia during and after physical activity.
- Identify guidelines for making food adjustments for physical activity.
- List kinds of physical activity.
- Identify community resources to support his/her physical activity plan

Behavioral Objectives

□ Make a plan for one way s/he will be physically active.

□ Make a plan for one way s/he will handle barriers to physical activity.

AADE= American Association of Diabetes Educators **ADA**= American Diabetes Association **ADtA**= American Dietetic Association **AHEC**=Area Health Education Center **HHM**= DCP Home Health Manual **IDC**= International Diabetes Center **IHS**=Indian Health Service **LWD**= Living With Diabetes **MDRTC**=Michigan Diabetes Research and Training Center **MF**= Milner Fenwick **NDEP**= National Diabetes Education Program **NIDDK=** National Institute for Diabetes, Digestive and Kidney Diseases **PC**=Pharmaceutical Company **SD**= Self-Developed **UNE**= University of New England

Evaluation Plan

Evaluation includes achievement of:

- Learning objectives identified in the education plan
- Participant-defined behavioral goals and objectives
- Education program goals and objectives

Materials List

Videos:

Armchair Fitness (CCM Productions)
Diabetes and Exercise: In Training (MF/AADE)

Audiotapes:

Chickercize Chair Exercises (IHS)

Models:

Footwear
Socks

Handouts/Visuals:

Activity Pyramid (IDC)
Calories Spent in Various Exercises (LWD)
Community Resource List (SD)
Diabetes Identification (www.medicalert.org)
Effort Scales (www.cdc.gov/physicalactivity/everyone/measuring/index.html)
Making Food Adjustments for Exercise: General Guidelines (IDC)
My Personal Activity Plan (SD)
Personal Goal(s)/Behavior Change Plan (SD)
Planning Your Exercise Program (LWD)
Physical Activity Calendar/Logbook (SD)
Physical Activity Guidelines for Americans (www.health.gov/pagunderlines)
Safe Stretches (Lifestyle Balance Program - DPP)
Target Heart Rates (LWD)
Tips for Safe Exercise (SD)
Tips to Follow Your Physical Activity Plan (SD)
TV Turnoff Week (www.tvturnoff.org)

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Physical Activity

Learning Objective	Content	Instructor's Notes
	I. Introduction A. Review diabetes self-care behaviors, including being active. B. Even a small increase in physical activity will have benefits for diabetes outcomes and general health C. Daily physical activity is very important and a major means to treat diabetes II. Attitudes A. Participant's definition B. Obstacles/barriers viewed by participant C. Advantages/benefits viewed by participant III. Definitions A. Physical activity is any form of body movement that results in an increase in metabolic demand; encompasses work related tasks, normal daily activities, leisure-time pursuits, recreational and competitive sports	Review learning objectives. Videos, models, handouts/visuals, computer presentations, discussion/whiteboard/ overhead, as appropriate, such as those listed below. Discussion: *Explore participant perceptions of what constitutes physical activity.*
Describe his/her perceptions of physical activity. Describe his/her feelings about participating in regular physical activity.		

Describe the differences between aerobic and anaerobic activity.	1.Physical or exercise training is defined as a program that is performed on a regular basis in order to achieve a goal, such as to improve cardiorespiratory fitness 2.Athletic training is chronic exercise performed to enhance athletic ability and improve physical performance a.The most common exercise training is performed for therapeutic purposes b.Therapeutic purposes include to promote physical fitness, to reduce the risk of disease, to rehabilitate orthopedic injuries, and to strengthen muscles to prevent the reoccurrence of such injuries and to rehabilitate from disease B. Energy Systems 1.The energy for muscle contraction is derived directly from the breakdown of adenosine triphosphate (ATP). To maintain the ATP concentration during contraction, the muscle relies on both anaerobic and aerobic metabolic processes 2.Both aerobic (with oxygen) and anaerobic (without oxygen) processes provide energy for muscle contraction during exercise a.Aerobic Energy System: used during long-term physical activity such as biking, running, brisk walking (4-6 miles per hour), cross country skiing and swimming b.Anaerobic Energy Systems: (1)First anaerobic system is used during an all-	

Define intensity in his/her own words. **List benefits of physical activity.** Describe how physical activity affects blood glucose.	out effort, such as sprinting for 8-12 seconds (2)Second anaerobic system, anaerobic glycolysis, involves the breakdown of carbohydrate stored within the muscle cell (glycogen) to lactic acid, producing ATP in the muscle. Lactic acid, if accumulated in high concentrations, will interfere with muscle metabolism and contraction and adversely effect performance C. Intensity 1.Intensity is effort; it is the amount of energy a person puts into an activity 2.Activities that lead to moderate intensity/effort include brisk walking, hiking, bicycling and roller blading 3.Activities that lead to vigorous intensity/effort include running, hiking, bicycling, cross-country skiing, soccer, basketball, swimming 4.Activities can be both moderate and vigorous, depending on factors such as incline and speed IV. Relationship of physical activity to glucose level A. Lowers blood glucose 1.Increases glucose uptake 2.May not improve blood glucose if in poor control B. Decreases insulin resistance 1.Increases receptor sites 2. Insulin works better to move glucose out of the	Video: *Diabetes and Exercise: in Training* Discussion: *Ask participants to share the benefits of physical activity and list on whiteboard.*

List benefits of physical activity.	blood and into the body's cells C. Reduces medication requirements 1.In type 2, regular physical activity in combination with healthy eating/meal planning may reduce or eliminate need for medication 2.In type 1, physical activity may reduce insulin requirements when diabetes is well managed V. Physical activity and weight control A. Weight loss is important in the treatment and prevention of type 2 diabetes. Physical activity burns calories to help with weight loss and weight control B. Modest weight loss of 10-20 lbs. (5-10 kg) or 5% of body weight is often sufficient to improve glycemic control and cardiovascular risk related to weight C. The combination of healthy food choices, physical activity, and behavior modification is the most effective approach to weight control D. Low-intensity, long-duration physical activity is recommended for weight loss E. A combination of lifestyle (e.g. using stairs instead	

List benefits of physical activity.	of elevator) and programmed activity (e.g. daily brisk walking) recommended F. Physical activity may help prevent weight gain in individuals with type 1 diabetes on intensive therapy VI. Other benefits of physical activity (in addition to lowering blood glucose and weight control) A. Reduced risk of coronary heart disease (CHD) 1.Improved cardiovascular risk factor profile 2.Reduced adiposity, blood pressure, dyslipidemia, and platelet adhesiveness, as well as enhanced fibrinolysis (breakdown of fibrin or blood clot) 3.Reduced risk of myocardial infarction with the maintenance of an active, compared with sedentary, lifestyle is estimated to be 35-55% 4.Regular, versus sporadic, aerobic exercise promotes cardiovascular fitness a.Frequency: 3-5 times/week b.Duration: 20-60 minutes c.Intensity: 50-74% of maximum aerobic capacity d.Energy expenditure: modulate type, frequency, duration, and intensity to attain energy expenditure of 700-2000 cal/week B. Reduced risk of type 2 diabetes 1.Physical activity improves insulin sensitivity and glycemic control among individuals without diabetes as well as those with pre-diabetes	

	2.Potential reduction in the risk of type 2 diabetes associated with the maintenance of an active, compared with sedentary, lifestyle is estimated to be 30-50% C. Improves cardorespiratory and muscular fitness D. Improves strength, endurance, and flexibility E. Reduces depression F. Increases energy G Reduces stress H. Provides sense of health and well-being 1.Release of neurochemicals called endorphins I. Improves self-esteem and self-image J. Improves sleep quality K. Improves cognitive function in older adults L. Improves functional health in older adults M. Prevents falls N. Increases bone density O. Lowers risk of hip fracture	

	P. Reduces risk of colon and breast cancers Q. Reduces risk of early death R. Regular physical activity increases metabolism so more calories are burned, even at rest VII. Physical activity guidelines for Adult Americans A. Adults should do 2 hours and 30 minutes (150 minutes) a week of moderate-intensity, or 1 hour and 15 minutes (75 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic physical activity. Aerobic activity should be performed in episodes of at least 10 minutes, preferably spread thoughout the week. B. Additional healthy benefits are provided by increasing to 5 hours (300 minutes) a week of moderate-intensity aerobic physical activity, or 2 hours and 30 minutes a week of vigorous-intensity physical activity or an equivalent combination of both. C. Adults should also do muscle-strengthening activities that involve all major muscle groups performed on 2 or more days per week.	Handout: *Physical Activity Guidelines for Adult American*

List the physical activity guidelines for adult Americans.	D. Older adults (65 and older) should follow the adult guidelines. If this is not possible due to limiting chronic conditions, older adults should be as physically active as their abilities allow. They need to avoid inactivity. Older adults should do physical activity that maintains or improves balance if they are at risk for falling. E. For all individuals, some activity is better than none. Physical activity is safe for almost everyone and the health benefits outweigh the risks. F. Adults with disabilities should follow the adult guidelines. If this is not possible, these persons should be as physically active as their abilities allow. They should avoid inactivity. VIII. Tips to follow a physical activity plan A. Set aside a regular time for physical activity every day, rather than just trying to fit it in B. Be active with a family member or friend C. Do both fun 'play" activities and structured activities D. Have activities for different weather and seasons 1.Plan activities for good and bad weather E. Limit or change "sitting" activity 1.Replace sitting time with active time	Handout: *Tips to Follow Your Physical Activity Plan* *Physical Activity Calendar* Discussion: *Ask participants who are getting regular physical activity how they got started and how they keep on track.* Handout: *TV Turnoff Week*

Describe strategies to follow his/her physical activity plan.	2.Combine active time with sitting activities 3.Limit screen time to 1-2 hours a day F. Join a class or club G. Choose an enjoyable activity H. Plan active family getaways I. Make everyday chores active J. Keep a box in the car with equipment such as balls and Frisbees, so the family is always ready to be active K. Use of special equipment or expensive club not necessary L. Keep a record of activity—what do, how often, and length of time M. Sign a contract with yourself, a friend or a health care team member about activity plan N. Reward progress made O. Contact the health care team if any problems P. Handle physical activity barriers 1.Many things can get in the way of being physically active, including oneself, friends,	Handout: *Physical Activity Logbook* *Prompting Health and Behavior Change*

Identify strategies to handle barriers to physical activity.	family, work, lack of time, weather, expense, etc. 2.A person can handle barriers a.Plan ahead (1)Calendar (2)List activities to do alone/do with friends/do in bad weather, etc and post (3)Role play how to handle problem cues b.Stay away from or change problem cues (1)Keep TV and computer out of sight (2)Spend time with people who are active c.Use reminders and other helpful cues (1)Post weekly calendar (2)Write reminder notes and post (3)Join a group or club d.Ask for help (1)Tell people how they can help (2)Ask family/friends to be active with you e.Build a new healthy habit (1)Be physically active on a stationary bike while watching TV (2)Walk to a friend's home instead of driving	Handout; *Physical Activity Calendar* Role play: Handling problem cues and other barriers to being physically active.
Describe ways s/he can stay safe when physically active.	IX. Self-care considerations for safe physical activity A. Check with health care provider before starting a new physical activity or increasing time/intensity 1.Screening should include search for vascular and neurological complications, including silent ischemia 2.Exercise electrocardiogram (ECG) suggested in individuals with:	Handout: *Tips for Safe Exercise* Discussion: *Ask participants to share how they stay safe when physically active.*

List signs indicating a need to stop physical activity and consult a health care provider.	a. Known or suspected coronary artery disease (CAD), high blood pressure or elevated cholesterol, smoker, family history of heart disease b. In type 1 and >30 years of age or >15 years duration of diabetes c. In type 2 and >35 years of age B. Discuss with health care provider any unusual symptoms experienced during or after physical activity 1. Stop activity and consult with health care provider if any of these warning signs occur during physical activity: a. Shortness of breath that lasts more than five minutes b. Wheezing, coughing or difficulty breathing c. Pain, pressure or tightness in chest, neck,arms, back, shoulder or upper abdomen d. Lightheadedness, dizziness, fainting e. Cramps, severe pain, or muscle aches f. Severe prolonged fatigue or exhaustion after exercise g. Nausea or vomiting h. Weakness in arms, legs, hands, feet or transient blindness C. If diabetes complications, check with health care provider about special precautions D. Monitor blood glucose before, during, and after	

	exercise 1.If type 1 and blood glucose above 240 mg/dl, check for ketones. Avoid physical activity if ketones present 2.Discuss with health care provider guidelines for physical activity when blood glucose elevated	
Describe signs and symptoms of hypoglycemia during and after physical activity.	E. Learn recognition, treatment, and prevention of hypoglycemia 1. Wear diabetes identification 2.Carry carbohydrate to treat low blood sugar 3.Rehearse plan for treating hypoglycemia 4.Educate coaches and teammates about signs, symptoms, and treatment of hypoglycemia. 5.See *Acute Complications* module	Handout: *Diabetes Identification* Discussion: *Ask participants to share what they do to personally prepare themselves in the event of hypoglycemia.*
Identify guidelines for making food adjustments for physical activity.	F. Adjustments in food intake to accommodate activity level 1.Short Duration/ Low Intensity Activity a.If BG < 100mg/dl: consume 10 to 15 g CHO/hr (approx. one fruit, starch or milk) b.If BG > 100mg/dl: not necessary to increase food intake 2.Moderate Duration & Intensity a.If BG < 100mg/dl: 25 to 50g CHO before activity, then 10 to 15 g/hour of activity (1/2 meat sandwich with milk or fruit) b.If BG 100 to 180 mg/dl: 10 to 15 g of CHO (one fruit, starch or milk) 3.Longer duration & strenuous activity a.If BG < 100 mg/dl: 50 g CHO and monitor BG	Handout: *Making Food Adjustments for Exercise: General Guidelines*

	carefully (one meat sandwich with milk or fruit) b. If BG 100 to 180 mg/dl : 25 to 50 g CHO depending on intensity and duration (1/2 meat sandwich with fruit or milk) c. If BG 180 to 300 mg/dl: 10 to 15 g CHO (one fruit or starch) G. Warm up before physical activity exercise and cool down and stretch after for 5 to 10 minutes 1. Prevents muscle damage 2. Deep breathing and gentle stretches are examples 3. Stretching before the activity increases the chance of injury; warm up slowly to the activity to naturally stretch the muscles H. Avoid outdoor physical activity in extremes of heat and cold I. Wear proper footwear J Inspect feet before and after physical activity K. Coordinate food, medication, and physical activity 1. Know peak action times of medication 2. Give injection over non-working muscle L. Gradually increase the number of days and time spent being physically active	Handout: *Safe Stretches* Models: *Footwear* *Socks*

	M. Stay at a healthy intensity (effort) 1.A healthy effort helps prevent injury and diabetes complications, such as low blood sugar 2.Effort can be measured with: a.Talk Test: If can talk, working at moderate effort; if can talk in short phrases are working at vigorous effort; if cannot talk, working too hard b.Effort Scales: Use a rating scale based on body changes and/or perceived exertion to measure effort c.Measuring heart rate 3. Begin activity at a moderate rate, and increase intensity slowly and gradually; avoid overexertion N. Consider complications (retinopathy, that nephropathy, and neuropathy) that can be worsened by strenuous exercise O Wear clothing that is comfortable and appropriate to the activity P. Avoid vigorous physical activity on a full stomach Q. Read articles or books about the activity; be familiar with the activity, equipment, etc R. Drink adequate amounts of water before, during and after the activity to replace fluids	Handout: *Effort Scales* *Target Heart Rates*

	S. Use safe areas T. If alone, tell someone where you will be IX. Physical activity and diabetes medications A. If blood glucose levels before physical activity are less than 80 mg/dl, the risk of hypoglycemia is significant and the activity should not begin without ingestion of carbohydrates B. Physical activity will increase blood glucose level if not enough insulin present C. If type 1 and blood glucose > 240 mg/dl, test for ketones in urine; avoid physical activity if ketones present D. Discuss with health care provider guidelines for physical activity when blood glucose is elevated E. Insulin adjustment before, and possibly after, physical activity will: a.Allow for hepatic glycogenolysis to proceed b.Decrease the risk of hypoglycemia c.Lessen the need for supplemental food to manage exercise F. Suggested insulin adjustments to use before, and possibly after physical activity : a.30-50% reduction of the short acting insulin, ***or***	

	b.Decrease the insulin acting during the time of exercise by 10% of the total daily insulin dose c.Change basal rate on insulin pump d.Discuss insulin adjustments for physical activity with health care provider	
	G. Monitor blood glucose before, during (if >30 minutes duration), after exercise (½ -2 hrs.).Physical activity may have a delayed effect (up to 24 hours) for hypoglycemia	
	H. Wear medical identification bracelet or necklace	Handout: *Diabetes Identification*
	I. Physical activity can influence the rate at which insulin is absorbed from the injection site into the blood	
	J. Consider extra food for extra activity (See Adjustments in Food Intake above)	
	K. See *Acute Complications* module for hypoglycemia	
	X. Kinds of Physical Activity	Handout: *Activity Pyramid*
List kinds of physical activity.	A. Activities of daily living 1.Housework 2.Climbing stairs 3.Mowing the lawn 4.Walking the dog 5. Harvesting 6. Hauling, chopping, shoveling, digging	Handout: *Calories Spent in Various Exercises* Discussion: *Ask participants to share kinds*

	7. Yardwork B. Leisure activities 1.Walking 2.Hiking 3.Badminton 4.Bicycling (or stationary bike) 5.Bowling 6.Climbing 7.Frisbee 8.Kayak/canoeing 9.Swimming 10.Gardening 11.Dancing 12.Skiing 13.Golf C. Sports 1.Softball 2.Football 3.Volleyball 4.Basketball 5.Soccer 6.Tennis D. Exercise classes or tapes to exercise with at home 1.Stretch, yoga, Tai chi 2.Aerobics, including water 3.Chair exercises 4.Weights	*of physical activity. What kinds of physical activity do you enjoy? What kinds of physical activity do you…would you try?* Video: *Armchair Fitness* *Take a few minutes in class to stretch with video.*

Identify community resources to support his/her physical activity plan.	E. Local community resources 1.Outdoor areas (parks, nature trails, walking tracks, swimming pools, basketball courts, ski trails, etc) 2.Facilities (YMCA, fitness centers, Lifeline, swimming pools, malls for walking, etc) 3.Programs (clubs, teams, recreational) 4.People (family, friends, fitness specialist, exercise physiologist, personal trainer, coach, health care team, etc XII. Physical activity plan A. The physical activity plan is part of the diabetes management/care plan. 1.Develop physical activity plan with local health care team (i.e. physical therapist, physician, nurse, dietitian, individual, etc) 2.Considerations for physical activity plan a.Lifetime plan b.Type of activity (planned stretching, aerobics and weight bearing) c.Intensity level of activity 1.Talk Test 2.Rate of perceived exertion 3.Pulse rate B. Evaluate overall health status C. Work closely with physician and other health care team members	Audiotape: *Chickercize Chair Exercises* *Distribute chair exercise audiotape and instructions; lead in chair exercises as appropriate.* Handout: *Community Resource List* Handout: *Planning Your Exercise Program* Handout: *Effort Scales* *Target Heart Rates*

	D. Assure proper training and conditioning E. Consider type of diabetes 1.Be prepared to revise medication plan, such as changing insulin dosage, to guard against hypoglycemia 2.Be prepared to revise meal plan 3.Be sure diabetes management/care plan is reviewed and appropriate	

Behavioral Objective	**Instructor's Notes**
Make a plan for one way she/he will be physically active. Make a plan for one way s/he will handle barriers to physical activity. .	Review behavioral objectives. Making changes, such being physically active, is easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps Assist participants with applying concepts learned in the session to his/her personal diabetes care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it.

	Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab 9: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.

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Medications Tab

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Medications

Introduction

The purpose of this session is to discuss medications for the treatment of diabetes mellitus, considerations for their safe and effective use, and the value of a planned systematic approach to their use.

Learning Objectives

Survival Level:

- State the name, dose, schedule, action, and possible side effects of his/her medication.
- Describe strategies to take his/her medication safely and as prescribed.
- Identify guidelines for talking with the health care team about his/her diabetes medication.
- State that alcohol and other drugs can affect diabetes control.

Intermediate/Advanced Level:

- Describe the general staged approach to diabetes management and use of medications.
- Describe the timing of diabetes medication to meals/snacks and activity.
- Identify actions to remember to take medication.
- Identify the mechanism of action of diabetes medications.
- List possible side effects and potential risks of diabetes medications.
- State the indications for adding or changing medications to the treatment regimen.
- Describe possible influences of other medications on diabetes.

Additional for insulin:

Survival Level:

- Describe how to draw up, mix and inject the correct amount of insulin.
- Describe the correct areas to inject insulin.
- State how to tell if it is all right to inject insulin at a particular site.
- State how to tell if a particular bottle of insulin is usable.
- Describe the care, storage, and disposal of insulin, needles and syringes.

Intermediate/Advanced Level:

- Describe the different sources, types, strengths and action times of insulin.
- Describe methods for storing insulin during travel.
- Describe the reuse of disposable insulin syringes including techniques, benefits, and risks.
- Describe the various methods of insulin delivery and administration (i.e. pumps and injection devices).
- Define lipohypertrophy and lipoatrophy and describe how to prevent.
- Describe how to make adjustments in insulin dosage according to the guidelines provided by their health care provider.

Behavioral Objectives

□ Make a plan for one thing s/he will do to take his/her medicine(s) safely and as prescribed.

Additional for insulin:

□ Demonstrate the ability to draw up, mix and inject the correct amount of insulin.
□ Demonstrate the correct areas to inject insulin.
□ Demonstrate how to make adjustments in insulin dosage according to the guidelines provided by the health care provider.

Evaluation Plan

Evaluation includes achievement of:

- Learning objectives identified in the education plan
- Participant-defined behavioral goals and objectives
- Education program goals and objectives

Materials List

Videos:

Oral Medication for Diabetes (MF/AADE)
Understanding Insulin (MF/AADE)

Models:

Body Apron (www.ideabetes.org)
Insulin Bottle Samples (Actual)
Injection Device Samples (Actual)
Insulin Carrying Packs (Actual)
Medicine Organizers (Actual)
Pill Samples (Actual)

Pill Bottle Samples (Actual)
Pill Box Samples (Actual)
Sharps Disposal Containers (Actual)
Syringe Samples (Actual)

Booklets/Pamphlets:

Medicines for People With Diabetes (NIDDK)
Resource Guide (ADA)

Handouts/Visuals:

Administering Insulin (PC)
Comparison of Insulins (HHM)
Diabetes Identification (www.medicalert.org)
Disposal Tips (HHM)
Herbal Products (SD)
Injection Sites (LWD)
Insulin Action Times Chart (LWD)
Insulin Regimens (LWD, SD)
Medicine Lists (ADA, PC)
Mixing Insulin (PC)
Non-Prescription Medication (SD)
Oral Medication Chart (HHM)
Personal Goal(s)/Behavior Change Plan (SD)
Pharmacy Fact Sheets (PC)
Travel Tips (SD)
Wallet Identification Card (PC)

AADE**= American Association of Diabetes Educators** ADA**= American Diabetes Association** ADtA**= American Dietetic Association** AHEC**=Area Health Education Center** HHM**= DCP Home Health Manual** IDC**= International Diabetes Center** IHS**=Indian Health Service** LWD**= Living With Diabetes** MF**= Milner Fenwick** NDEP**= National Diabetes Education Program** NIDDK= **National Institute for Diabetes, Digestive and Kidney Diseases** PC**=Pharmaceutical Company** SD**= Self-Developed** UNE**= University of New England**

Learning Objective	Content	Teaching Strategy/Resource
	I. Introduction A. Review diabetes self-care behaviors, including taking medication B. Recall one of the goals of diabetes care is glucose control C. Recall glucose control is achieved through balancing food choices, physical activity, medications (if needed) and other self-care behaviors D. Recall that with diabetes a person either does not have enough insulin and/or has insulin resistance II. Diabetes medication types A. Oral medications B. Insulin C. Non-insulin injectable medications III. General considerations for medication therapy A. Individualized	Review learning objectives. Videos, models, handouts/visuals, discussion/whiteboard/ overhead, as appropriate, such as those listed below. Booklet: *Medicines for People with Diabetes*

Describe the general staged approach to diabetes management and use of medications. Describe the timing of diabetes medication to meals/snacks and physical activity.	1.Consider age, weight, diabetes duration, lipids and blood pressure, liver and kidney function, medication previously tried, etc B. Staged approach 1.Chronic disease, progressive—medication needs change over time 2.Balance with changes in meal and physical activity plans 3.Consider baseline control and degree of glucose reduction needed to reach goal 4.Health care providers develop consensus guidelines C. Combination therapy D. Frequent monitoring E. Side effects/contraindications F. Risks/benefits G. Effects on other risk factors 1.Lipids H. Commitment I. Medication regimen complexity J. Concurrent lifestyle changes	

State the name, dose, schedule, action, and possible side effects of his/her medication. Identify actions to remember to take medication.	K. Care and storage of medications L. Cost IV. Oral Medications A. General 1.Frequency of dosage varies among types of oral medications; take about the same time each day 2.Tips for remembering a.Associate with another daily activity b.Calendar, pill box 3.Recommendations for missed doses 4.Store at room temperature 5.Check expiration date 6.Oral diabetes medications should not be taken by women who are pregnant, lactating, or planning to become pregnant (as a general rule) 7.New oral medications being developed 8.Travel with medications 9.Report all side effects B. Indications for oral medications 1.Indicated when not reaching blood glucose goals with dietary therapy and physical activity 2.Adjunct to dietary therapy and physical activity, not a replacement	Video: *Oral Medications for Diabetes* Models: *Pill samples* *Pill bottle samples* *Pill box samples* Handout: *Oral Medication Chart* *Medicine List* Discussion: *Have participants write down the diabetes medication they take; use those medications for discussion of dose, schedule, action, possible side effects and a staged approach to diabetes medication.*

Identify the mechanism of action of diabetes medications.	C. Classes of Oral Agents 1.Sulfonylureas a.Generic (Brand) name (1)Glyburide (Diabeta,Micronase,Glynase Pres Tabs), Glipizide (Glucotrol, Glucotrol XL), Glimepiride (Amaryl) (Second generation) (2)Tolbutamide (Orinase),Chlorpropamide (Diabinese), Tolazamide (Tolinase), Acetohexamide(Dymelor) (First generation) b.Mechanism of Action (1)Stimulates release of insulin by the pancreas (primary effect) (2)May decrease hepatic insulin uptake (3)Effect on receptor sites and post-receptor defects (4)Dependent on functioning beta cells c.Contraindications (1)Type 1 diabetes (2)DKA (3)Not for use in pregnancy, (except glyburide may be used, however insulin is preferred medication in pregnancy) lactation (4)Hypersensitivity to the drug (5)Surgery (6)Elderly, debilitated or malnourished individuals d.Possible side effects (1)Primary: hypoglycemia, weight gain (2)Less common: dermatologic, gastrointestinal, hematologic (3)No significant risk for	Model; *Body Apron*

List possible side effects and potential risks of diabetes medications.	development of CV disease (UKPDS) e.Can be used alone or with other oral diabetes medication or insulin f.Interactions and incompatibilities with other medications (1)Alcohol - “antabuse-like” reaction with chlorpropamide (second generation do not cause alcohol intolerance) (a)Possible symptoms are headache, nausea, vomiting, thirst, sweating, flushing, a feeling of warmth, chest pain, confusion, syncope, vertigo, difficulty breathing, and/or hypotension (b)Symptoms last ½ hour to several hours depending on the amount of alcohol consumed 2.Meglitinides a. Generic (Brand) name 1. Repaglinide (Prandin), Nateglinide (Starlix) b.Mechanism of Action (1) Stimulates insulin secretion from pancreas (2) Dependent on functioning beta cells (3) Rapidly absorbed and eliminated c. To be taken immediately to 30 minutes before meals (skip medication if meal omitted, Prandin may be dosed preprandially 2, 3, or 4 times a day in response to changes in patients meal patterns per providers orders. d.Can be used as monotherapy or in combination with some other oral diabetes medications e.Contraindications	

	(1)type 1 diabetes (2)DKA (3)Hypersensitivity to the drug (4)Infection (5)Surgery (6)Elderly, debilitated or malnourished individuals (7)Not for use in pregnancy and lactation (8)Should not be taken with alpha-glucosidase inhibitors (unable to find reference for this) f.Possible side effects: (1)Same as sulfonylureas; because they are taken with a meal, unlikely to cause low blood sugar (2)Arthralgia/back pain/headache (3)Upper respiratory infection 3.Biguanides a.Generic (Grand) name (1)Metformin (Glucophage, Glucophage XR, Riomet Fortamet, Glumetza) b.Mechanism of Action (1)Inhibits hepatic glucose production (2)Increases glucose uptake and utilization (decreased insulin resistance) c.Secondary Benefits (1)Body weight tends to remain stable or decrease (2)Significant reduction in total cholesterol, reduction of LDL, increase in HDL, and reduction in triglycerides (3)Does not produce hypoglycemia when used	

	as monotherapy d.Contraindications: (1)Type 1 diabetes (2)Renal impairment (serum creatinine 1.5 or > in males or 1.4 > in females) and liver dysfunction (3)CHF that requires drug therapy (4)History alcoholism, binge drinking or acute or chronic metabolic acidosis, including ketoacidosis (5)Hypersensitivity to metformin (6)Not for use in pregnancy and lactation e.Possible side Effects (1)Diarrhea, nausea, abdominal bloating, cramping, feeling of fullness; usually self-limited (7-14 days) and lessened by starting with low dose, increasing dose slowly and taking with food. (2)Less common: metallic taste (3)Agitation, sweating, headache (4)May cause reduction in Vitamin B12 (5)Rare: lactic acidosis f.Withhold metformin with: (1)Conditions predisposing to acute renal failure or acidosis such as CHF, major surgery, MI (2)Diagnostic or medical exams using intravenous contrast media g.May be used with some other oral diabetes medications h. Ovulation may be restored if not ovulating because of insuin resistance 4. Alpha Glucosidase Inhibitors - a. Generic (Brand) name	

	(1)Acarbose (Precose), miglitol (Glyset) b.Mechanism of Action (1)Reduces the rate of absorption of carbohydrates (2)Reduces postprandial glucose levels c.Take only when eating d.Contraindications: (1)Type 1 diabetes (2)DKA (3)Hypersensitivity to the drug (4)Chronic intestinal disease (5)Inflammatory bowel disease (6)Colonic ulceration (7)Obstructive bowel disorders (8)Elevated serum creatinine - >2.0 (9)Cirrhosis (10)Not for use in pregnancy, lactation or in children (11)Should not be taken with meglitinides (can't find reference) e. Possible side Effects (1)Dose related GI complaints such as abdominal pain, flatulence and diarrhea; reduced if dose increased slowly (2)Hepatic dysfunction at high doses f.Hypoglycemia if used in combination with sulfonylureas or insulin: Treat hypoglycemia with glucose tabs, Instaglucose, or milk, the absorption of sucrose and complex CHO is delayed. g.Can be used alone; some can be used with insulin and some other oral diabetes medications	

	5.***Thiazolidinediones (TZDs) a.Generic (Brand) name (1)**Pioglitazone (Actos), (2)*Rosiglitazone (Avandia) b.Mechanism of Action (1)Stimulate receptors with increased glucose uptake (decreased insulin resistance) c.May take 4-6 weeks to start working d.Contraindications (1)Type 1 diabetes (2)DKA (3)Hypersensitivity to the drug e.Possible side effects: edema, weight gain, liver dysfunction f.Monitoring of liver function necessary (drug discontinued if liver function abnormal) g.Can be used alone; some can be used in combination with insulin and some other oral diabetes medication h. Ovulation may be restored if not ovulating because of insulin resistance 6. DPP-IV Enzyme Inhibitors a.Generic (Brand) name (1)Sitagliptin phosphate (Januvia) (2) Saxagliptin (Onglyza) (3) Linagliptin (Tradjenta) b.Mechanism of Action (1)Inhibiting DPP-IV enzyme results in decreased fasting plasma glucose (2)Suppression of postprandial glucose excursions (3)Works only when blood sugar is high, especially	***Note website sources pg 26 FDA Warnings for TZD's

State the indications for adding or changing medications in the treatment regimen.	after eating c.Once – daily dosage d.Contraindications: (1)Hypersensitivity to sitagliptin, saxagliptin e.Possible side effects Sitagliptin (1)Allergic reactions, including rash and hives (2)Runny nose and sore throat Saxagliptin (1) URI (2) UTI (3) H/A 6. Dopamine Receptor Agonists a. Generic (Brand) name (1) Bromocriptine (Cycloset) b. Mechanism of Action (1) It is not clear how Cycloset improves glycemic control, but it is thought that the drug taken at a particular time of day boots dopamine activity which helps improve metabolism problems related to diabetes. c. Once – daily dosage d. Contraindications: (1) Hypersensitivity to bromocriptine (2) Cycloset should not be taken by people who take ergot medicines. (3) Caution in people who take blood pressure medication. e. Possible side effects (1) nausea, fatigue, vomiting, headache, and dizziness.	

	D. Indications for medication changes 1.Ineffectiveness of medication for individual from the beginning (occurs in 30-40% of people) 2.Loss of glucose control due to chronic nature of diabetes a.Decrease in beta cell function b.Increase in insulin resistance 3.Loss of glucose control due to weight gain, inactivity, stress, illness, non-adherence to diabetes management/care plans 4.Loss of glucose control due to inadequate dose, other drugs, impaired absorption E. Combination therapy 1.Types of combination therapy a.Combination of oral medications (1)Metformin and glipizide (Metaglip) (2)Metformin and glyburide (Glucovance) (3)Metformin and **pioglitazone (Actoplus met) (4)*Rosiglitazone and glimepiride)(Avandaryl) (5)*Rosiglitazone and metformin (Avandamet) (6)Sitagliptin and metformin (Janumet) b.Combination of oral medication(s) and insulin c.Check current FDA approvals for various combinations of oral medications and/or insulin 2.Indications a.Used only in type 2 diabetes b.Not meeting control goals on one oral medication alone c.Not meeting control goals on insulin alone	

State the name, dose, schedule, action, and possible side effects of his/her medication.	d. Improves adherence to medication plan 3.Contraindications a.Type 1 b.Other concerns regarding costs and complex medication regime 4.Subject of current research V. Non-insulin Injectable Diabetes Medication A. Incretin mimetic 1.Exenatide (Byetta) 2.Liraglutide (Victoza) a Mechanism of Action (1)Increased insulin synthesis and secretion in the presence of elevated glucose (2)Improvement in first-phase insulin response (3)Reduced glucagon concentrations during hyperglycemic swings (4).Slowed gastric emptying (5).Reduced food intake b.Administration (1)used with metformin, sulfonylurea, or TZD (2)Injected in separate syringe (3)For use type 2 c.Benefits (1)Improves postprandial hyperglycemia (2)Modest improvement in A1C levels (3)Reduction in body weight often noted d.Contraindications e.Possible side effects (1) nausea, vomiting, diarrhea	Video: *Understanding Insulin*

Identify the mechanism of action of diabetes medications. List possible side effects and potential risks of diabetes medications. Describe the different	(2) weight loss f. Warning: http://www.byetta.com/Pages/index.aspx?WT.srch=1 http://www.victoza.com/ http://www.nlm.nih.gov/medlineplus/druginfo/meds/a611003.html B.Amylin analog 1.Pramlintide(Symlin) a.Mechanism of action (1)Slows gastric emptying (2)Suppresses glucagon secretion (3)Regulates food intake b.Administration (1)Used with insulin at meal times (2)Injected in separate syringe (with meals) (3)For use in type 1 or type 2 c.Contradindications d.Possible side effects (1)Nausea VI. Insulin A. Mechanism of action 1.Binds to insulin receptor a.Inhibits hepatic glucose production b.Stimulates hepatic glucose uptake c.Stimulates glucose uptake by muscle d.Mildly stimulates glucose uptake by adipose tissue	Model: *Body Apron* Handout: *Comparison of Insulins*

sources, types, strengths, and action times of insulin.	B. Possible Side effects 1.Type 2- hypoglycemia and weight gain 2.Type 1- hypoglycemia 3.No increase or acceleration of macrovascular disease (UKPDS) C. Indications for use 1.Type 1 a.Essential for life b.Prevents ketosis 2.Type 2 a.Has not reached blood glucose goals with meal plan, physical activity and oral medication b.During periods of illness, surgery, other increased stress, or when blood glucose is high at diagnosis c.During pregnancy and with gestational diabetes when blood glucose is not controlled by meal plan and physical activity d.As disease progresses, decline in insulin secretion may necessitate the addition of exogenous insulin e.If oral diabetes medications are contraindicated D. Types of Insulin 1.Rapid – Acting a.Lispro (Humalog) b.Aspart (Novolog) c.Glulisine (Apidra) 2.Short-acting Regular (Humulin R, Novolin R)	Models: *Syringe samples* *Insulin bottle samples* Handout: *Insulin Action Times Chart*

	3.Intermediate-acting, NPH (Humulin N, Novolin N) 4.Long-acting a.Detemir (Levemir) b.Glargine (Lantus) 5.Mixtures a.70% NPH:30% Regular (Humulin 70/30) b.70% NPH: 30% Regular (Novolin 70/30) c.50% NPH:50% Regular (Humulin 50/50) d.50% lispro protamine suspension, 50% lispro (Humalog Mix 50/50) e.75% lispro protamine suspension, 25% lispro (Humalog mix 75/25) f.70% aspart protamine suspension, 30% aspart (Novolog Mix 70/30)	Handout: *Administering Insulin*
Describe how to draw up, mix, and inject the correct amount of insulin.		Handout: *Mixing Insulin*
	E. Properties of insulin 1.Onset, peak and duration of action a.Concentrations (1)U-100 (100 units/ml) - usually has orange cap – most common (2)U-500 (500 units/ml) - available by prescription on special order b.Varies depending on type of insulin, insulin injection technique, physical activity and body response	
Describe the correct areas to inject insulin. **State how to tell if it is all right to inject insulin at a particular site.**		Handout: *Injection Sites*
	F. Administration of insulin 1.General a.Insulin dosages and frequency are based on blood glucose levels, meal plan, and physical activity plan b.Various kinds of insulin can be used alone or in	

State how to tell if a particular bottle of insulin is usable. Describe methods for storing insulin during travel.	combination c.Dosage and frequency will likely vary over time d.Pattern management and dose adjustment 2.Technique a.Single type of insulin b.Mixing insulins (1)Regular and NPH: mixture stable in any ratio; prefilling acceptable; refrigerated stable one month (2)Rapid Acting insulin with NPH mixture stable in any ratio; administer immediately after mixing (3)Glargine/detemir: Do not mix with other insulins (4)Commercially premixed insulins 3.Injection sites a.Top and outer third of each thigh: exercise increases absorption rate b.Abdomen (1)Avoid navel and midline due to increased number of nerve endings (2)Avoid belt line due to irritation by clothing c.Upper arm d.Buttocks (outer upper quadrant) e.Inject in same site at same time each day for consistency of absorption. Rotate area of injection within each site 4.Factors influencing absorption rates a.Injection into exercised body part b.Temperature of insulin - inject at room temperature c.Avoid site massage d.Rate of absorption varies with site. Sites with	Handout: *Travel Tips* Model; *Insulin Carrying Packs*

Describe the reuse of disposable insulin syringes including techniques, benefits, and risks.	slowest to fastest absorption rates are: buttock, thigh, arm, abdomen e.Thigh or buttock may be preferred site for bedtime insulin due to slower absorption rate f. Check for lipoatrophy/lipohypertrophy G. Storing insulin 1.Stable at room temperature for 28 days; refrigerate extra bottles (insulin taken at room temperature more comfortable) 2.Avoid temperature extremes - keep in range of > 32^0 F to < 86^0 F 3.Check expiration date 4.Do not use if insulin does not mix (stringy) or abnormal color 5.Traveling a.Keep insulin with you and not stored in baggage b.If hot outside, store in insulated container such as thermos c.On trips, carry extra insulin, syringes and snacks on your person d.Carry extra prescriptions for syringes and medications e.Learn current airline policies for carry on of insulin supplies	
Describe the care, storage, and disposal of insulin, needles, and syringes.	H. Syringes and Needles 1.One (1) cc syringe equals 100 units insulin 2.Low-dose syringe (0.30, 0.50 cc) available for	Handout: *Disposal Tips* Model: *Sharps Disposal Containers*

Describe various methods of insulin delivery and administration. Define lipohypertrophy and lipoatrophy and describe how to prevent.	dosages under 50 units 3.Two (2) cc can be ordered for large doses 4.Fine and short needles available (short not appropriate for obese patients) 5.Reusing disposable syringes a.Financial implications b.Replace cap after use c.Proper skin preparation needed d.Use good hand washing technique e.Studies have demonstrated infection is not a problem with above guidelines - major problem is needle dullness f.Reuse of syringe is dependent on individual consideration g.Reuse of syringes containing glargine not recommended h.Reuse of non-insulin injectables not recommended 6.Guidelines for disposal of used syringes and lancets a.Avoid accidental punctures b.Use puncture-resistant containers for disposal (i.e. plastic, bleach bottle, or laundry detergent bottles) c.Carry-in/carry-out – when traveling bring sharps home and dispose of in puncture-resistant containers d.Check for locations for sharps disposal in your community I. Injection aids and pumps 1.Automatic injectors	Handout: *Resource Guide* Model: *Insulin Injection Devices*

Describe how to make adjustments in insulin dosage according to guidelines provided by their health care provider. **Describe strategies to take his/her medicine safely and as prescribed.**	2.Jet injectors 3.Insulin Pens 4.Insulin Pump J. Complications of exogenous insulin therapy 1.Hypoglycemia (See *Acute Complications* module) 2.Lipoatrophy a.Occurs at site of injection b.Allergic response to insulin c.Avoid cold insulin d.Avoid affected area for injection site as absorption may be altered 3.Lipohypertrophy a.Less common as insulin purity has increased b.Caused by fat disposition c.Avoid affected area for injection site as a absorption may be altered K. Insulin regimens 1.General considerations a.Mechanisms of action b.Advantages and disadvantages c.Frequency of monitoring d.Psychological issues 2.Types a.One injection per day (single type/mixed) b.Two injections per day (single type/mixed) c.Three or more injections per day (single type/mixed) d.Insulin pump e.Insulin with glucose-lowering agents	Handout: *Insulin Regimens* Handout: *Wallet Identification Card* *Diabetes Identification* Model: *Medicine Organizer*

	3.Adjusting insulin doses a.Adjust under health care provider supervision b.Use of monitoring results (1)Look for explanations of blood glucose variations (2)Need to repeat tests more than one day to identify patterns before changing dose L. Diabetes Identification 1.Wear/carry diabetes identification VII. Tips to Take Medication as Prescribed A. Talk with health care team about medication that fits in personal schedule B. Take at about the same time each day C. Take when doing other routine activities D. Keep in convenient locations E. Use self-reminders 1.Calendar 2.Sticky notes 3.Medicine organizer/pill box F. Talk with health care team about: 1. What to do if medication is missed, lost or damaged 2. What to do about special events and when away from home	Handout; *Medicine List*

Identify guidelines for talking with the health care team about his/her diabetes medication. **State that alcohol and other drugs can affect diabetes control.** Describe possible influences of other medications on diabetes medication.	3. How to get more medication when needed VIII. Tips to Take Medication Safely A. Know the name, dose, schedule, etc B. Keep a medicine list C. Take as prescribed D. Do not take anyone elses medication E. Do not share medication with others F. Read the label each time filled G. Store properly H. Do not use out of date (expired) medication I. Do not use if change in color or appearance J. Keep in original container K. Tell health care team about all medication taken L. Use the same pharmacy and health care providers for medication whenever possible M. Avoid alcohol and drugs N. Wear diabetes identification	Handout: *Pharmacy Fact Sheets*

	O.Guidelines for Talking With Health Care Team 1.Not at target blood sugar goal 2.Side effects from medication 3.Missing/stop taking medication 4.Plan to take new medication, including over-the-counter, herbal, etc 5.Surgery or medical procedure planned 6.Illness 7.Event/special occasion planned that may affect eating, sleeping, physical activity or medication schedule 8.Pregnant or planning pregnancy IX. Other medications that affect blood glucose A. Use of other medications may increase or decrease insulin needs B. Many medications can cause either hyperglycemia, hypoglycemia, or interact with oral diabetes medication to cause fluctuations in glucose C. Drugs causing hyperglycemia include: Beta Blockers (usually with type 2) Caffeine - (in excess) Corticosteroids Catecholamines - stress hormones, especially epinephrine, found in cold preparations and diet pills Thiazide Diuretics (Diuril, Hydrodiukil, Esidrix, Lasix, Aldactone, Chlorothiazide,	

	Hydrochlorothiazide) Estrogens Glucagon Isoniazid Niacin Oral Contraceptives Phenothiazines Phenytoin (Dilantin) Rifampin (Rifadin) - used in treating tuberculosis "Recreational drugs" (amphetamine, cocaine, nicotine) Sympathomimetics Thyroid preparations D. Drugs causing hypoglycemia include: Alcohol Allopurinol Anabolic Steroids Beta-blockers (usually with type 1; usually with propranolol) Chloramphenicol Cimetadine Clofibrate Coumarins Methyldopa (Aldomet) MAO Inhibitors (Parnate, Nardil, Eutonyl) NSAIDs Phenylbutazone (Butazolodin) Probenecid Salicylates (large doses) Sulfa Drugs (Gantrisin, Septra, Bactrim)	Handout: *Non-prescription Medication*

	Quinine E. Drugs that can mask symptoms of hypoglycemia: Beta blockers F. Over-the-counter medications 1.Over-the-counter "cold' medications containing sympathomimetics (ie phenylproponolamine pseudoephedrine) may cause glycogenolysis and can cause diabetes to go out of control, especially in people who use insulin 2.Aspirin in high doses may cause a hypoglycemic effect 3.Many sugar-free products are available G. Limit intake of medications to those prescribed or approved by health care provider H. Report all side effects to health care provider I. Limit pharmacy use to one or two different pharmacies and the same with health care providers (when possible) to avoid drug interactions X. Alcohol A. Alcohol can interfere with the action of both insulin and oral medications B. Alcohol can also have an extended effect to decrease blood glucose	Handout: *Herbal Products*
Describe the causes, symptoms, treatment and		

prevention of hypoglycemia.	C. Alcohol is available in many forms, including liquid medications D. There are alternatives for medications that contain alcohol and/or glucose: sugarless and alcohol free lozenges and cough drops XI. Herbal Products/"Natural" Remedies A. These products may also cause higher or lower blood glucose, as well as interact with other medications. Discuss with health care provider and pharmacist XII. Hypoglycemia A. Can occur with sulfonylureas , meglitinides and insulin B. Can occur with biguanides, alpha glucosidase inhibitors, and glitazones if taken with a sulfonylurea or insulin C. Duration of action will affect when and for how long the hypoglycemia occurs D. Can occur with combination of alpha glucosidase inhibitors with sulfonylurea or insulin therapy but cannot be treated with sucrose-containing products—use milk or glucose tablets instead	

	E. Contact health care provider right away if hypoglycemia does not respond to treatment F. See *Acute Complications* Module	

Behavioral Objective	**Instructor's Notes**
Make a plan for one thing s/he will do to take his/her medication(s) safely and as prescribed. Additional for Insulin: Demonstrate how to draw up, mix and inject the correct	Review behavioral objectives. Making behavior changes, such taking diabetes medication safely and as prescribed, is easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps Assist participants with applying concepts learned in the session to his/her personal diabetes

amount of insulin. Demonstrate the correct areas to inject insulin. Demonstrate how to make adjustments in insulin dosage according to the guidelines provided by their health care provider.	care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it. Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.

*__Avandia__
http://www.accessdata.fda.gov/drugsatfda_docs/label/2011/021071s040lbl.pdf
http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm143349.htm

****Actos**
http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm109136.htm
http://www.fda.gov/Drugs/DrugSafety/ucm259150.htm

Would also reference a Physicans' Desk Reference (PDR) for more drug information.

Oral Medications Used to Treat Type 2 Diabetes

Class	Generic Name	Brand Name	Daily Dosage Range (mg)	Usual Maximum Daily Effective Dosage (mg)
Enhance insulin effects				
Biguanide	Metformin	Glucophage	500-2,550	1,000 twice daily
	Metformin Extended Release	Glucophage XR Fortamet Glumetza		1,000-2,000 daily
	Liquid Metformin	Riomet	500-2,550	500-1000 twice daily
Alpha-glucosidase inhibitor	Acarbose	Precose	25-300	50 three times daily
	Miglitol	Glyset	25-300	50 three times daily
Thiazolidinidione	**Pioglitazone	Actos	15-45	45 once daily
	*Rosiglitazone	Avandia	2-8	8 once daily
Augment insulin supply				
Sulfonylurea	Glyburide	DiaBeta	1.25-20	5 twice daily
		Micronase	1.25-20	5 twice daily
		Glynase Pres Tabs	0.75-12	3 twice daily
	Glipizide	Glucotrol	2.5-40	10 twice daily
	Glipizide Extended Release	Glucatrol XL	5-20	10 twice daily
	Glimepiride	Amaryl	1-8	4 once daily
	Tolbutamide	Tolbutamide	500-3,000	1,000 three times daily
	Chlorpropamide	Chlorpropamide	100-750	500 once daily
	Tolazamide	Tolazamide	100-1000	500 twice daily
Meglitinide	Repaglinide	Prandin	0.5-16	4 three times daily
	Nateglinide	Starlix	60-360	120 three times daily
DPP-IV Enzyme Inhibitors				
	Sitagliptin Phosphate	Januvia	25-100	100 once daily
	Sazagliptin	Onglyza	2.5-5 mg	5 once daily
	Linagliptin	Tradjenta	5 mg	5 daily
Dopamine Receptor Agonists.				
	Bromocriptine	Cycloset	0.8 mg-4.8 mg	1.6 mg-4.8 mg once daily
Bile Acid Sequestrants				
	Colesevelam	Welchol	3750mg	daily
SGLT2 Inhibitors				

	Invokana	Canagliflozin	100-300 mg	daily
Combination Therapy				
Sulfonylurea and Biguanide	Glyburide/ Metformin	Glucovance	1.25/250-20/2000	
Sulfonylurea and Biguanide	Glipizide/ Metformin	Metaglip	2.5/250 20/2000	
	Repanglinide/ Metformin	PrandiMet	1/500-10/2500	
Thiazolidinedione and Biguanide	*Rosiglitazone/ Metformin	*Avandamet	2/500 – 8/2000	
	**Pioglitazone/ Metformin	*Actoplus met	15/500-45/2550	
	Pioglitazone/ Metformin XR	ACTOplus met XR	15/1000-45/2000	
Thiazolidinedione Sulfonylurea	*Rosiglitazone/ Glimepiride	*Avandaryl	4/1-8/4	
	Pioglitazone/ glimpiride	Duetact	30/2-45/8	
DPP IV Enzyme Inhibitor and Biguanide	Sitagliptin/Metformin	Janumet	50/500 – 100/2000	
	Saxagliptin/ Metformin	Kombiglyze XR	2.5/1000ER-5/2000ER	
	Linagliptin/Metformin	Jentadueto	2.5/500, 2.5/850, 2.5/1000	

*Avandia
http://www.accessdata.fda.gov/drugsatfda_docs/label/2011/021071s040lbl.pdf
http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm143349.htm

****Actos**
http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm109136.htm

http://www.fda.gov/Drugs/DrugSafety/ucm259150.htm

Human Insulins, Insulin Analogs, and Other Injectables

	Timing of Action		
Preparation	**Onset**	**Peak**	**Duration**
Rapid-acting			
Lispro (Humalog)	10-30 min	0.5-3hours	3 - 5 hours
Aspart (Novolog)	5-15 min	0.5-3 hours	3 - 5 hours
Glulisine (Apidra)	10-30 min	0.5-3 hours	3 - 5 hours
Short-acting			
Regular (Humulin R, Novolin R)	30 min	1-5 hours	8 hours
Intermediate-acting			
NPH (Humulin N, Novolin N)	1-4 hours	4-12 hours	14-26 hours
Long-acting			
Glargine (Lantus)	1-2 hours	Minimal Peak	Up to 24 hours
Detemir (Levemir)	1-2 hours	Peak	*Duration 16-24 hours depending on dose (see Pharmacodynamics chart)
Concentrated			
Humulin R U 500	30 min	1-5 hours	24 hours

Mixtures	
50% NPH; 50% Regular	Humulin 50/50
70 % NPH; 30% Regular	Humulin 70/30
70% NPH; 30% Regular	Novolin 70/30
50% lispro protamine suspension, 50 % lispro	Humalog Mix 50/50
75% lispro protamine suspension, 25% lispro	Humalog Mix 75/25
70% aspart protamine suspension, 30% aspart	NovoLog Mix 70/30

Timing of insulin is variable among individuals depending on the site and depth of injection, skin temperature, and exercise.

Human Insulins, Insulin Analogs, and Other Injectables

Other Injectables			
Product	**Mechanism of Action**	**Type of Diabetes**	**# of Injections Per Day**
Exenatide (Byetta, Bydureon)	Incretin mimetic that enhances glucose-dependent insulin secretion and several other antihyperglycemic actions of incretins.	2	2
Victoza	Incretin mimetic that enhances glucose-dependent insulin secretion and several other antihyperglycemic actions of incretins.	2	1
Pramlintide (Symlin)	Synthetic analog of human amylin, a naturally occurring hormone made in the beta cells, which slows gastric emptying, suppresses glucagon secretion, and regulates food intake	1 and 2	1 – 4 (with meals)

Pharmacodynamics: Insulin NPH vs Detemir
Diabetes Care 28: 1107-1112, 2005

	NPH	**Insulin detemir**				
	0.3 IU/kg	**0.1**	**0.2**	**0.4**	**0.8**	**1.6**
Onset of action (h)	1.8	2.0	2.0	1.6	1.1	0.8
End of action (h)	15.3	7.6	14	21.5	23.7	23.9

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Monitoring

Introduction

The purpose of this module is to provide information on monitoring blood glucose, recording test results and interpreting results for diabetes management and self-care decisions to maintain or improve blood sugar control.

Learning Objectives

Survival Level:

- State recommended and personal blood glucose goals.
- State when to do self-blood glucose monitoring.
- Describe the steps in self-blood glucose monitoring.
- Identify information to include in monitoring logbook.

Additional if diabetes management/care plan includes ketone testing:

- Describe the steps in testing urine ketones.
- State when to test urine ketones.
- State the need to contact health care provider if urine ketones are positive.

Intermediate/Advanced Level:

- Define the purpose of self-blood glucose monitoring.
- Explain that self-blood glucose monitoring is done to determine the actual level of glucose in the blood.
- List personal benefits of monitoring blood glucose.
- Identify the advantages and disadvantages of blood glucose monitoring.
- Describe factors to consider when selecting blood glucose monitoring equipment.
- List factors that can affect self-blood glucose monitoring test results.
- Explain the importance of keeping diabetes test records.
- Describe proper care of blood glucose monitoring equipment.
- Define A1C.
- State the importance of A1C testing.
- Define estimated average glucose (eAG).
- Describe how to adjust diabetes management/care plan based on blood glucose results.

Behavioral Objectives

- ☐ Make a plan for one thing s/he will do to monitor his/her blood glucose.
- ☐ Demonstrate a method of record keeping for self-blood glucose monitoring results.

Additional if diabetes management/care plan includes ketone testing:

- □ Demonstrate urine ketone testing correctly with the testing material s/he uses.

Evaluation Plan

Evaluation includes achievement of:

- Learning objectives identified in the education plan
- Participant-defined behavioral goals and objectives
- Education program goals and objectives

Materials List

Videos:

Introduction to Pattern Management (MF/AADE)
Monitoring Your Blood Glucose (MF/AADE)

Models:

A1C Pillow (www.ideabetes.com)
Red Blood Cell with Glucose Attached (SD)
Self-Blood Glucose Monitoring Equipment and Supplies (Actual)
Sharps Disposal Container Samples (Actual)
Urine Ketone Testing Supplies (Actual)

Booklets/Pamphlets:

Pattern Control: A Guide for Adjusting Your Insulin Doses (IDC)
Resource Guide (ADA)

Handouts/Visuals:

Clinical Practice Recommendations (ADA, SD)
Comparison Chart for A1C and Estimated Blood Glucose (ADA)
Control Your Diabetes—For Life (NDEP)
Disposal Tips (HHM, SD)
Local Resource List (SD)
Patient Counseling Card (HHM)
Pattern Samples (SD)

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Personal Goal(s)/Behavior Change Plan (SD)
Self-Blood Glucose Monitoring Record Book (PC)
Self-Monitoring—Taking Charge of Your Diabetes (Pratt Pharmaceuticals)
Testing Your Urine for Ketones (UNE)
The Power to Control Diabetes Is In Your Hands (NDEP)
Timing Blood Sugar Test to Assess the Effect of Insulin Dose (HHM)

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Learning Objective	Content	Instructor's Notes
State recommended and personal blood glucose goals.	I. Introduction A. Review diabetes self-care behaviors, including monitoring B. Review role of meal planning, physical activity, medication, and other self-care behaviors in diabetes control C. Review the goal of diabetes management to control blood glucose and prevent/delay complications II. Blood Glucose Goals A. Goal range: span of numbers to stay within; goal is to get as close as possible to normal without low blood glucose or other problems from the treatment 1.If outside range, take action B. Recommended blood glucose goals (non-pregnant adults): 1.Plasma values: Preprandial Goal – American Diabetes Association (ADA) –	Review learning objectives. Videos, models, handouts/visuals, discussion/whiteboard/overhead, as appropriate, such as those listed below. Handouts: *Control Your Diabetes—For Life* *Clinical Practice Recommendations*

	90-130mg/dl American College of Endocrinology (ACE) – <110 mg/dl Postprandial goal – ADA - <180 mg/dl ACE - <140 mg/dl 2.HbA1c: Normal: <6 Goal: ADA - <7 ACE - <6.5% Additional action: >8 C. Personal blood glucose goals 1.Patient and diabetes care team set 2.May change 3. Personal target blood glucose goals depend on age, type of diabetes, current blood glucose, diabetes management/care plan (including meal, physical activity and medication plans), ability to do self care, episodes of hypoglycemia, other conditions (such as cardiovascular disease, illness, infection, etc), comfort level of client 4.Use as guide for evaluating monitoring data III. Types of Monitoring: A. Self-blood glucose monitoring B. Urine testing (ketones)	Discussion: *Review personal blood glucose goals participant has written down.*

	C. Continuous Glucose Monitoring D. Glycated proteins IV. Self-blood glucose monitoring (SBGM) A. Purpose: 1.Evaluate blood glucose control 2.Decide what changes are needed to improve control 3.Evaluate changes made 4.Evaluate effectiveness of treatment plan 5. Learn how body responds to different events B. Advantages 1.Accurate reflection of blood glucose levels at the time of testing a.Not affected by factors that invalidate urine tests 2.Blood glucose monitoring results provide information to make adjustment in diabetes management/care plan a.Permits adjustment during illness b.Permits adjustment during physical activity c.Permits documentation of hypoglycemia d.Identifies effect of food choices on blood glucose levels 3.Reduces risk of complications through tighter control a.Able to see patterns b.Prevent problems from low and high blood	
Define the purpose of self-blood glucose monitoring. Explain that self-blood glucose monitoring is done to determine actual level of glucose in the blood. List personal benefits of monitoring blood glucose. Identify the advantages and disadvantages of blood glucose monitoring.		Handout: *Self-Monitoring—Taking Charge of Your Diabetes* Discussion: *Ask participants to brainstorm personal benefits of monitoring blood glucose and list on whiteboard.*

	sugar c.Know when to call health care provider 4.Encourages control of diabetes management by the individual which leads to better adherence to recommended regimen 5.Documents need for testing ketones C. Disadvantages 1.Cost 2.Meters require invasive testing through skin D. Types of testing equipment 1.See ADA Resource Guide E. Types of lancet devices 1.See ADA Resource Guide	
Describe factors to consider when selecting blood glucose monitoring equipment. List factors that can affect self-blood glucose monitoring test results.	F. Factors to consider when choosing blood glucose monitoring equipment 1.Degree of blood glucose control desired 2.Characteristics of the individual a.Type of diabetes b.Presence of long term complications c.Financial resources d.Presence of factors that might influence the information obtained (i.e. visual impairment, arthritis, cognitive ability, etc.) e.Level of motivation f.Need for alternate testing sites	Handout: *Resource Guide* Models: *Blood Glucose Monitoring Equipment and Supplies* Discussion: *Review factors for individuals who have not yet chosen equipment.*

	3.Characteristics of the various methods and materials a.Meters produce a specific number reading versus a visually read strip which indicates a range b.Estimated financial costs and savings differences c.Ease or difficulty in performing test d.Ease of interpretation of results e.Ability to get drop of blood on strip f.Portability g.Size h.Timeliness of test i.Data management capabilities G. Alternate Testing Sites 1.Advantages a.Can use other sites such as forearm, upper arm, thigh, palm b.Provides accurate reading if not in hypoglycemic state 2.Caution – alternate testing site should be avoided when blood glucose is falling or low because may not give an accurate reflection of blood glucose 3.Guidelines for use a.Alternative sites may be used before a meal and 2 hours after a meal b.Should not be used when person is hypoglycemic or in hypoglycemic state (eg. after exercise, during illness, before driving)	

State when to do self-blood glucose monitoring.	c.Persons with hypoglycemic unawareness should not use alternative sites H. Measurement of capillary whole blood vs. plasma 1.Plasma (lab) measurements are approximately 12% higher than whole blood measurement 2.Conversion Formulas Capillary value = lab plasma value / 1.12 lab plasma value = capillary value x 1.12 3.Current meters give results in plasma measurements I. Frequency of Testing 1.Considerations a.What type of diabetes does the person have? b.What does the person with diabetes want to do? c.What is the current status of the diabetes control? d.What are the meal,physical activity and medication plans? Are they changing? e.What is important about lifestyle/daily schedule with regard to activity, food, work? f.Physical ability to check blood glucose. g.Does the individual have the ability to use the information and make management decisions? h.What is the attitude of the person toward BG testing? i.Are there financial limitations that may pose a	Handout: *Timing Blood Sugar Test to Assess the Effect of Insulin Dose*

	barrier to BG testing? j.Are there other medical conditions? k.Is there illness or stress? 2.Helpful times to test include one or more of the following: a.Fasting b.Before meals c.Two hours after a meal d.Bedtime 3. Other times when it is important to test: a.Before, during and after physical activity b.When having symptoms of low/high blood sugar c. During times of illness and stress d. During any medication change e. After any significant weight changes	
Describe the steps in self-blood glucose monitoring.	J. Procedure for blood glucose monitoring 1.Steps: - follow steps as outlined in the manual for each individual meter 2.Tips: a.Use reminders to make testing part of daily routine b.Gather all materials needed before doing a test c.Wash hands with soap and warm water and dry thoroughly d.Poke a different site on the fingers with each test e.Use the side of the finger rather than the tip	

Explain the importance of keeping diabetes test records. **Identify information to include in monitoring book.**	f .Follow instructions supplied with meter for testing procedure as well as calibrating and cleaning the meter g.Use control solution to verify that meters strips are working properly h.Dispose of lancets in puncture-proof container 3.Recording results a.Important to help with: (1)Knowing if blood glucose is at target goal (2)Identifying blood glucose patterns (3)Identifying reasons for blood glucose patterns (4)Make needed changes in the diabetes management/care plan (5)Evaluate the effect on blood glucose of changes made b.Include information about meals/snacks, physical activity,and medication including time and amount c.Include blood glucose result with date and time of test d.Include information about unusual activities, events or circumstances, including illness, injury , stress 4.Share logbook information with the diabetes care team and discuss results with them regularly a.Determine if daily tests results reflect quarterly A1C	Handout: *Disposal Tips* Model: *Sharps Disposal Container Samples* Discussion: *Success/problem solving related to monitoring* Handout: *Self-Blood Glucose Monitoring Record Book* Discussion: *Practice use of SBGM record book—times to test, recording results, highlighting goals met/not met.*

Describe proper care of blood glucose monitoring equipment.	b.Call sooner than appointment if pattern of hypo and hyperglycemia is noted K. Care of equipment 1.Check expiration dates 2.Keep meters clean 3.Strips are sensitive to light, moisture and temperature; keep covered and dry 4.Avoid heat/freezing which can alter results 5.Know how to get equipment/supplies when needed	Models: *Self-blood Glucose Monitoring Equipment and Supplies*
Describe the steps in testing urine ketones. **State when to test urine ketones.**	V. Urine testing for ketones A. Purpose: to identify impending acidosis B. Testing urine for ketones 1.When blood glucose is $\geq$ 300 mg/dl (type 1) 2.Unexplained BG $\geq$ 240 - $\geq$ 300 mg/dl on 2 consecutive occasions (type 2) 3.Illness/stress 4.Pregnancy 5.During periods of weight loss 6.Insulin pump users when BG $\geq$ 300 mg/dl (may indicate failure in insulin delivery) C. Tests for ketones 1.Acetest 2.Ketostix 3 Keto-Diastix 4.Chemstrip UGK or K	Handout: *Testing Your Urine for Ketones* Models: *Urine Ketone Testing Supplies*

State the need to contact health care provider if urine ketones are positive.	5.Dia Screen IK 6.Dia Screen 2 GK 7.Keto Care Ketone Test D. Record and relay results to health care provider for appropriate treatment 1.Report positive ketones (moderate or high) to health care provider VI. Blood Testing for Ketones A. Precision Xtra meter and test strips measure blood glucose as well as blood ketones VII. Continuous Glucose Testing A. How it works 1.Monitors glucose from interstitial fluid that is converted to an electronic signal 2.Sensor-type device transmits signal to a monitor that captures data continuously 3.Measurement period – up to 72 hours B. Purpose 1.Diagnostic and prescriptive use a.Glycemic effects of food, exercise, insulin b.Previously unrecognized hypoglycemia c.Proper insulin doses to match food absorption in gastroparesis d.Effects of dialysis on glucose levels C. Meters	

Define A1C. State the importance of A1C testing.	1.Accu-Check® Aviva 2. Accu-Check® Nano 3. Bayer - Contour® Next 4. Abbott Freestyle Lite VIII. Glycosolated Hemoglobin (GHb) A. Definition: The GHb assay indicates the percentage of total hemoglobin to which glucose is attached 1.Average life of red blood cell is three months. Concentration of GHb reflects mean blood glucose over preceding 6-10 weeks 2.Distinguish between HbA_1, HbA_{1c} and other glycosylated proteins 3.HbA1c performed by lab using standardized testing is preferred test 4.Tells risk for the complications of diabetes B. Advantages 1.Reveals hidden hyperglycemia 2.Reflects mean blood glucose control over time; not influenced by adherence to treatment plan 24 hours prior to health care provider visit 3.Enhances motivation to lower and maintain blood glucose 4.Monitors effectiveness of diabetes management 5.Clarifies contradictory or confusing blood glucose test results	Model: *Red Blood Cell with Glucose Attached* *A1C Pillow* Discussion: *Glazed donut analogy* Discussion: *Ask participants if they know their most recent A1C value*

Define estimated average glucose (EAG).	C. Disadvantages 1.Interfering factors (hemoglobinopathies) may affect measurement of A1C depending on the method D. Frequency 1.Testing at least one or two times a year in individuals with a history of stable glycemic control 2.Quarterly testing in individuals whose therapy has changed or who are in poor control 3. Prior to conception to insure blood glucose control, or at the first sign of pregnancy if not done prior to conception E. Using A_{1c} to determine mean blood glucose (A_{1c} (X) 33.3) - 86 = Mean Blood Glucose IX. Estimated Average Glucose (eAG) A. eAG is being reported together with A1C by some labs B. eAG is reported in the same units as self-blood glucose monitoring tests (mg/dl) C. eAG can help the person with diabetes and the diabetes care team better understand what the A1C is saying about the achievement of target blood glucose goals	Handout: *Comparison Chart for A1C and eAG* Discussion: *Ask participants if they have*

Describe how to adjust diabetes management care plan based on blood glucose results.	X. Fructosamine A. Definition - a glycated serum protein test that measures glycemic control over 2 to 3 weeks 1.Normal ranges vary among different methods of measurement B. Advantages - determines degree of success of glucose lowering interventions over a shorter period of time 1.pregnancy 2.individuals with hemoglobinopathies XI. Pattern Control A. Steps in pattern control: 1.Know target goals 2.Eat and be physically active consistently 3.Know insulin action times (if applicable) 4.Look for glucose patterns (over at least three days) 5.Determine reason for high or low glucose 6.Consider solutions 7.Take action B. Self-Care 1.Do not make significant changes in treatment plan based on only a few tests; collect information over a period of several days 2.Ask health care provider for guidelines on how to adjust treatment plan	*ever needed to have a fructosamine measured* Video: *Introduction to Pattern Management* Handout: *Pattern Samples* Discussion: *Use Pattern Samples example to discuss actions to take to adjust diabetes management.*

	3. Monitoring needs to be done regularly until a pattern is established 4. Bring testing record/diary to appointments 5. Contact the diabetes care team for low blood glucose tests that are not understood or if blood glucose results change suddenly 6. Use monitoring results to problem solve and work with the diabetes care team	Handout: *Patient Counseling Card*

Behavioral Objective	**Instructor's Notes**
Make a plan for one thing s/he will do to monitor his/her blood glucose. Demonstrate a method of record keeping for self-blood glucose monitoring results. If diabetes management/care plan includes ketone testing, demonstrate urine ketone testing correctly with the testing material s/he uses.	Review behavioral objectives. Making behavior changes, such taking monitoring blood glucose, is easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps Assist participants with applying concepts learned in the session to his/her personal diabetes care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it. Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.

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Preventing, Detecting, and Treating Acute Complications

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Preventing, Detecting, and Treating Acute Complications

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Preventing, Detecting, and Treating Acute Complications

Introduction

The purpose of this session is to discuss the major acute complications of diabetes—hypoglycemia, hyperglycemia (including diabetic ketoacidosis (DKA) and Hyperglycemic Hyperosmolar Non-ketotic Syndrome (HHNS), and the management of sick days. Emphasis is placed on prevention, early recognition, and treatment.

Learning Objectives

Survival Level:

- State the causes, symptoms, treatment, and prevention of hypoglycemia.
- State the causes, symptoms, treatment, and prevention of hyperglycemia.
- Describe the management of sick days.
- Describe guidelines for emergency preparedness.

Intermediate/Advanced Level:

- Describe his/her symptoms of hypoglycemia.
- State that hypoglycemia can occur without symptoms, especially during the night.
- Identify the diabetes identification and carbohydrate source they will carry for treatment of hypoglycemia.
- State importance of informing close friends about hypoglycemia and how they can recognize and assist with treatment if necessary.
- Explain the somogyi phenomenon and its prevention and treatment.
- Define diabetic ketoacidosis and identify possible causes, symptoms, treatment, and prevention.
- Describe the progression of untreated hyperglycemia to diabetic ketoacidosis (DKA) or hyperglycemic hyperosmolar nonketotic syndrome (HHNS).
- Describe the dawn phenomenon and its treatment.
- State how concurrent illness may affect diabetes.

Behavioral Objectives

- □ Make a plan for one thing s/he will do to manage hypoglycemia, hyperglycemia and sick days.

Evaluation Plan

Evaluation includes the achievement of:

- Learning objectives identified in the education plan
- Participant-defined behavioral goals and objectives
- Education program goals and objectives

Materials List

Models:

Carbohydrate Source Samples (Actual Products)
Sick Day Kit (SD)

Handouts/Visuals:

Carbohydrate Content of Liquid and Soft Foods (IDC)
Diabetes Identification (www.medicalert.org)
Foods to Replace Meals During Brief Illness (IDC)
Hyperglycemia (PC)
Hypoglycemia (PC)
Personal Goal(s)/Behavior Change Plan (SD)
Sample Self-Blood Glucose Monitoring Record Illustrating Somogyi (SD)
Sick Day Guidelines (SD)
Sources of 15 Grams of Carbohydrate (HHM)
Wallet Identification Card (PC)

Game:

Symptoms Cards/Board (SD)

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Learning Objective	Content	Instructor's Notes
	I. General A. Review diabetes self-care behaviors, including problem-solving and reducing risks B. Major acute complications are hypoglycemia and hyperglycemia C. Hyperglycemia can lead to diabetic ketoacidosis (DKA) and hyperglycemic hyperosmolar non-ketotic syndrome (HHNS) D. Prevention and early recognition of hypoglycemia and hyperglycemia and appropriate treatment can decrease problems associated with them E. Even with careful attention to balancing food, physical activity, and medications, acute complications can occur II. Hypoglycemia A. Definition 1.Any blood glucose level <70 mg/dl or <80 with symptoms	Review learning objectives. Videos, models, handouts/visuals, discussion/whiteboard/ overhead, as appropriate, such as those listed below. Discussion: *Define hypoglycemia by examining each syllable* *Hypo= low* *Glyc=sugar* *Emia=blood*

State the causes, symptoms, treatment, and prevention of hypoglycemia.	2.Person with diabetes may or may not be symptomatic; symptoms vary from person to person 3.Occurs in people with diabetes taking oral diabetes medications with hypoglycemia side effect and/or insulin 4.Usually sudden onset B. Causes 1.Too much diabetes medication—insulin/some oral (See *Medications* module) 2.Skipped or delayed meals/snacks 3.Increased physical activity without extra food 4.Alcohol 5.Stress C. Symptoms/Detection 1.Early Stage: a.Weakness b.Faintness c.Tiredness d.Shakiness e.Dizziness f.Sweaty, clammy (cold, moist skin) g.Tachycardia/fluttering in chest h.Hunger i.Irritability j.Anxiety k.Nervousness l.Visual disturbances m.Paleness (pallor)	Handout: *Hypoglycemia* Discussion: *Use participant experiences with symptoms when possible. Case presentation as alternative.* Game: *Participant assigns/places symptoms (card with word and picture) to/on hypoglycemia or hyperglycemia column of board.* Role Play:

Describe his/her symptoms of hypoglycemia. State that hypoglycemia can occur without symptoms, especially during the night.	n.Numbness, tingling lips 2.Mid-Stage: a.Headache b.Mental confusion c.Combativeness d.Poor coordination e.Slurred speech f.Personality change 3.Late Stage a.Convulsions b.Loss of consciousness (usually blood glucose <20 mg/dl) 4.Individual Symptoms a.Each person with diabetes and their family and friends need to identify their own symptoms for hypoglycemia 5.Hypoglycemia Unawareness a.Some individuals may not experience any symptoms indicating hypoglycemia b.Hypoglycemia unawareness can often occur during the night while sleeping c.Individuals with hypoglycemia unawareness need to test blood glucose more frequently and may need to keep their blood sugar at a slightly higher level until symptoms of hypoglycemia return 6.Relative hypoglycemia a.When blood glucose has been high or out of control for some time, some people experience hypoglycemia signs and symptoms when their blood glucose is dropping, even though their	*Hypoglycemia symptoms and treatment.*

	blood glucose is not dropping into a true hypoglycemia range. Frequent self-blood glucose monitoring recommended. D. Treatment If can check blood sugar right away, test first; if unable to test right away, treat first. 1.Rule of "15" a.If blood glucose is < 70 mg/dl, consume 15 grams of carbohydrate b.Wait 15 minutes and test blood glucose again c.If blood glucose is still < 70 mg/dl after 15 minutes, consume additional 15 grams of carbohydrate d.If blood glucose has risen to 70 to 120 mg/dl and it is still one hour to next meal, treat with additional 15 grams of carbohydrate and protein 2.Sources of 15 grams of carbohydrate a.Starch List (1)6 saltine-type crackers (2)3 graham crackers (3)8 animal crackers b.Fruit List (1)1/3 cup cranberry, grape, or prune juice (2)½ cup apple, pineapple, grapefruit, or orange juice (3)2 tbsp raisins c.Milk List (1)1 cup skim milk (2)1 cup low-fat milk (3)3/4 cup skim milk plain yogurt	Discussion: *Develop a hypoglycemia treatment plan with participant to post on their refridgerator at home.* Models: *Carbohydrate Source Samples* Handout: *Sources of 15 Grams of Carbohydrate*

	(4)3/4 cup low-fat milk plain yogurt (5)1/3 cup regular low-fat fruited yogurt (6)1 cup skim milk fruited yogurt, sweetened with aspartame (7)½ cup regular pudding (8)½ cup light ice cream d.Other Carbohydrates (1)½ cup regular gelatin (2)1/4 cup sherbet (3)4 ounces cola (4)6 ounces ginger ale (5)1 tbsp honey (6)1 tbsp brown sugar (7)1 tbsp corn syrup (8)4 tsp sugar (9)1 tbsp jelly/jam e.Commercial Products (1)3 Glucose Tablets™ (2)40 g Glutose™ (3)18 g Insta Glucose™ (4)½ packet (25 g each) Insulin Reaction Gel™ 3.Treatment of late stages a.Glucagon can be injected if person has passed out or unable to swallow (1)Available with physician prescription (2)Indications for use (3)Administration technique (4)Potential for vomiting after administration (5)Storage expiration date b.Contact health care provider or emergency facility	Discussion: *Review use of glucose tablets or milk for people on alpha glucosidase inhibitors*.

	E. Prevention 1.Review diabetes management/care plan,, including self-care behaviors 2.Know when hypoglycemia is most likely to happen 3.Plan for changes in meals/snacks, physical activity, and/or medication; avoid sudden changes 4.Eat meals/snacks at about te same time and it the same amount each day. .Eat meals 4-5 hours apart plus planned snacks; do not skip or delay meals 5.Take correct dose of insulin or diabetes pills daily 6.Individuals taking insulin a.Eat extra food for extra activity (i.e. tennis, swimming, extra housework, extra activity other than daily routine) b.For 30 minutes of strenuous exercise take 10 to 15 g carbohydrate (i.e. fruit or starch exchange) c.For each hour of strenuous exercise take 25 to 50 g carbohydrate (i.e. ½ sandwich and 4 oz milk) d.Test blood glucose before bedtime. If <100 mg/dl, eat an additional bedtime snack 7.Extra precautions a.Wear or carry diabetes identification b.Carry a carbohydrate source or glucose tablets or gels for emergency c.Family/friends should be educated about	Discussion: *Have participant share what they do to be prepared in case of a hypoglycemic episode.*
Identify diabetes identification and carbohydrate source they will carry for treatment of hypoglycemia.		Discussion: *Participants share the type of diabetes identification and carbohydrate source they are carrying.*

State importance of informing close friends about hypoglycemia and how they can recognize and assist with treatment if necessary. Explain the somogyi phenomenon and its prevention and treatment.	causes, symptoms, treatment and prevention of hypoglycemia d.Plan for physical activity e.Monitor blood glucose often f. Avoid or limit alcohol III. Somogyi Phenomenon A. Definition: Rebound elevation of blood glucose, glycosuria, or even ketonuria in response to hypoglycemia B. Cause 1.Hypoglycemia episode mobilizes body defenses, such as epinephrine and glucagon, causing glycogen to be converted to glucose 2.Sometimes this mechanism overshoots the body's need for glucose and leads to hyperglycemia C. Diagnosis/Monitoring 1.Report of hypoglycemic reaction often occurring while sleeping followed by blood or urine showing elevated glucose 2.Record low blood sugars noting timing of reaction in relation to administration of insulin 3.A urine test, often in the morning, showing ketones but no glucose 4.Importance of blood glucose monitoring whenever changes in insulin dosage are made	Handout: *Wallet Identification Card Diabetes Identification* Handout: *Sample SBGM Record Illustrating Somogyi* Discussion: *Share participant experiences with somogyi phenomenon if possible; case study as alternative.*

States the causes, symptoms, treatment and prevention of hyperglycemia.	D. Treatment: consult with health care provider to decrease medication appropriately IV. Hyperglycemia A. General: High blood glucose can be a life-threatening situation as well as cause other chronic and acute problems if it is high for a long time. B. Definition Blood glucose above target goals C. Causes 1.Deviations from meal plan a.Too much food b.Unhealthy food choices 2.Skipped or incorrect medication dose or doses 3.Inactivity 4.Illness or infection 5.Stress, surgery or trauma 6.Counter regulatory hormones (i.e. glucagon, growth hormone, catecholamines) 7.Other factors a.Other hormonal changes b.Some medications D. Signs and symptoms 1.Early Stage a.High blood test readings	Discussion: *Define hyperglycemia by examining each syllable:* *Hyper= high* *Glyc= sugar* *Emia= blood* Handout: *Hyperglycemia* Discussion:

Define diabetic ketoacidosis and identify possible causes, symptoms, treatment and prevention. Describe the progression of untreated hyperglycemia to DKA or HHNS.	b.Excessive urination c.Excessive thirst d.Tiredness e.Excessive hunger with weight loss f.Blurring of vision g.Dizziness 2.Mid Stage a.Diabetic Ketoacidosis (DKA) (1)Elevated plasma glucose (2)Loss of appetite (3)Acetone on breath (4)Lipolysis, ketones (5)Nausea and vomiting, abdominal pain (6)Hot, dry, flushed skin (7)Electrolyte imbalance (K+ loss) (8)Hyperventilation (9)Altered consciousness state, drowsiness (10)Dehydration b.Hyperglycemic Hyperosmolar Nonketotic Syndrome (HHNS) (1)Severe hyperglycemia >800 mg/dl, generally 1,000-2,000 mg/dl (2)Excessive thirst (3)Marked dehydration (4)None to slight ketones in urine (5)Abdominal pain (6)Plasma or serum hyperosmolarity (7)Shallow respirations (8)Hyperventilation	*Use participant experiences with symptoms when possible. Case presentation as alternative. Focus on key point applicable to the participant(s).* Game: *Participant assigns/places symptoms (card with word and picture) to/on hypoglycemia or hyperglycemia column of board.* Role Play: *Hyperglycemia symptoms and treatment.*

	(9)Altered consciousness state, drowsiness (10)Dehydration 3.Late Stage a.Diabetic Ketoacidosis (Diabetic coma) (1)Kussmaul respirations (rapid, deep breathing) (2)Acidosis, unconscious (3)Mortality 5% b.Hyperglycemic Hyperosmolar Non-ketotic Syndrome (1)Seizures, appearance of cerebrovascular accident-like signs and symptoms (2)Mortality 15-25% with 50% severe cases E. Treatment 1.Hyperglycemia a.Review diabetes management/care plan, including self-care behaviors b. Identify probable reason(s) for increased blood glucose c.Get back on care plan, or revise if necessary, and test blood glucose more often d.Distinguish between emergency and non-emergency hyperglycemia (1)The level of high blood glucose that will lead acute serious problems will vary among people with diabetes (2)There is a greater chance of problems if the blood glucose is over 300, but some people may have them at lower blood glucoses.	

	e.Call health care provider if blood glucose stays above usual range for more than a week, over 180 mg/dl)for several days, there are two blood glucose sin a row over 300 mg/dl, ketones are present, sickness for more than two days and/or signs of dehydration, and follow guidelines given for treatment f.Drink water and sugar-free liquids g.Follow sick day guidelines if ill 2.Diabetic Ketoacidosis - DKA a.Prompt recognition and treatment of problems b.Seek expert medical care (1)Hospitalization is necessary (2)Lower acetone level (3)Lower blood glucose (4)Restore fluid and electrolyte balance 3.Hyperglycemic Hyperosmolar Non-ketotic Syndrome - HHNS a.Prompt recognition and treatment of problems b.Employ life-saving measures immediately (1)Hospitalization is necessary (2)Restore fluid and electrolyte balance F. Prevention 1.Stay at target blood glucose goals 2.Take diabetes medications as prescribed every day 3.Follow sick day guidelines; see health care team for illness and infection when indicated	

Describe the dawn phenomenon and its treatment.	4.Test blood for glucose and urine for ketones as directed, especially during illness or stress. 5.Record blood glucose results and discuss regularly with health care team 6.Follow meal plan 7.Follow a regular pattern of physical activity 8.Increase knowledge of disease and build diabetes management/self-care skills through education 9.Stress management V. Dawn phenomenon A. Definition: Unexplained gradual rise in blood glucose level between 3 AM and 7 AM B. Cause: Secretion of insulin antagonist hormones at onset of sleep 1.Growth hormone 2.Cortisol 3.Catecholamines C. Diagnosis: Blood glucose monitoring at bedtime, 3:00 A.M. and fasting D. Treatment 1.Give intermediate insulin dose with bedtime snack instead of before dinner 2.Insulin pump - preprogram pump to increased basal rate at 5:00 - 7:00 A.M.	

State how concurrent illness may affect diabetes. **Describe the management of sick days.**	VI. Sick Day Guidelines A. Effect of illness on diabetes 1.Increased blood glucose in most cases, but may have decreased blood glucose (importance of monitoring) 2.Increased insulin needs 3.Ketones present in urine in individuals with type 1 4.Individuals with type 1 diabetes may develop ketoacidosis 5.Individuals with type 2 diabetes may also develop ketoacidosis on sick days 6.Individuals with type 2 diabetes may develop Hyperglycemic Hyperosmolar Nonketotic Syndrome without presence of ketones in urine B. Care 1.Take usual dose of medication, even if unable to eat 2.Monitor blood glucose every 2 to 4 hours 3.Monitor urine for ketones if blood glucose is > 240 mg/dl 4. Keep eating, even if not feeling well, small amounts of carbohydrates 5.Take liquids every hour; if not eating, liquids containing 10 to15 g carbohydrate are recommended (i.e. ½ cup ginger ale, cola or juice). If eating, liquids remain vital and may be sugar-free (water, broth, tea) depending on blood glucose. Try to have 15 g carbohydrate for every	Handout: *Sick Day Guidelines* Handout:

	hour awake 6. If unable to follow regular meal plan, try easily digested carbohydrate foods such as liquids or soft foods containing 50 g carbohydrate every 3 to 4 hours to replace meals 7. Guidelines for increasing insulin dosage a. Follow health care provider instructions b. Use regular or lispro insulin for "extra" doses c. Extra insulin recommended for blood glucose > 240 mg/dl and moderate to large ketones. Small doses may be prescribed for blood glucose > 240 mg/dl without ketones present 8. Rest and keep warm. Do not exercise and try not to be left alone 9. Sick Day Kit a. Prepare items/foods needed for sick days ahead of time and keep in special place VII. Notification of health care provider A. Clarify notification criteria with their health care provider B. General recommendations for notifying provider: 1. Rising urine ketone levels 2. Ketones in urine for more than 12 hours 3. Two consecutive blood glucose readings of more than 300 mg/dl or most of blood glucose test over 240 mg/dl for three days 4. Sick with a cold or flu for more than two days	*Foods to Replace Meals During Brief Illness* *Carbohydrate Content of Liquid and Soft Foods* Model: *Sick Day Kit* Discussion: *Ask participants to verbalize or write down their sick day plan*. Activity: *Make a sick day kit.*

Describe guidelines for emergency preparedness	5. Vomiting or diarrhea for longer than six hours or if unable to keep any liquids down 6. Other symptoms that are unusual or may be due to a serious problem, such as feeling drowsy or faint, pain,increasing weakness and/or fast/troubled breathing 7. Symptoms of dehydration such as dry, flushed skin, dry mouth, or decreased urination 8. Temperature rises to > 101.5 F VIII Guidelines for Emergency Preparedness A. Food & Water – 3-7 day supply on hand B. Medication 1. One week supply of insulin and all medications on hand 2. Store medications in one location in original containers 3. Have a list of all medications (dose, frequency, provider prescribing) C. Medical Supplies 1. One week supply of lancets, glucose meter strips, and other supplies you use 2. Extra batteries for pumps and meters D. Emergency Bag - in case you need to leave home 1. Medication list 2. Medications and supplies for 3 days 3. Medical papers like insurance cards	Role play: *How to get ready and what to do in an emergency*

	4. Bring refrigerated medication E. People who can Help 1. Make a plan of action with family and friends 2. Make list of people who can help a.Family and friends b.Neighbors c.Hospital d.Medical suppliers e.Doctor/home care provider f.Pharmacy F. Create an Emergency Health Information Card 1. Communicates to rescuers what they need to know about you if unconscious 2. Keep copies in wallet, emergency supply kits 3. Information to include on card a.Name b.Address c.Phone d.Birth date e.Blood type f.Social security number g.Health insurance information h.Physicians i.Emergency contacts j.Conditions, disability k.Medication l.Assistance needed m.Allergies n.Immunization dates	

	o.Communication needs p.Special equipment needs	

Behavioral Objective	**Instructor's Notes**
Make a plan for one thing s/he will do to manage hypoglycemia, hyperglycemia and sick days.	Review behavioral objectives. Making behavior changes, such managing hypoglycemia, hyperglycemia and sick days, is easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps Assist participants with applying concepts learned in the session to his/her personal diabetes care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it. Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.

Insert

Preventing (Risk Reduction), Detecting, and Treating Chronic Complications Tab

Front of Tab

Insert

Preventing (Risk Reduction), Detecting, and Treating Chronic Complications Tab

Back of Tab

Preventing (Risk Reduction), Detecting, and Treating Chronic Complications

Introduction

The purpose of this session is to discuss the prevention, detection and treatment of the major long-term complications of diabetes, including risk factor reduction and incorporating personal health habits into daily self-care.

It is recommended that the participant have basic knowledge about diabetes and self-care before presenting this session. Readiness to learn about complications needs to be assessed before the content is presented. A positive approach may help participants develop a realistic and hopeful attitude in light of recent advances in the prevention of complications associated with diabetes.

Learning Objectives

Survival Level:

- Identify recommended and personal A1C, blood pressure and LDL cholesterol goals.
- Identify strategies to decrease his/her risks for complications.
- Describe self-care practices for preventing complications.
- Describe key tests/exams s/he needs on a regular basis to decrease/monitor complications.

Intermediate/Advanced Level:

- State that controlling blood glucose, blood pressure, and blood lipids reduces the chance of complications.
- Identify reasons for regular health monitoring.
- Identify contributing risks to diabetes complications, including tobacco use.
- List the major complications of diabetes.
- Identify the organ systems particularly at risk from diabetes.
- Describe the key outcomes of the Diabetes Control and Complications Trial (DCCT).

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- Describe the key outcomes of the United Kingdom Prospective Diabetes Study (UKPDS).
- Describe the prevention, recognition, and treatment of the major complications of diabetes.
- Describe the major symptoms and factors in prevention and treatment of cardiovascular and peripheral vascular disease.
- State the importance of screening for dyslipidemia.
- State that high blood pressure increases the risk of eye, kidney and heart disease.
- State the need for control of high blood pressure.
- State the need for regular blood pressure monitoring.
- Describe the major symptoms and factors in prevention and treatment of eye disease.
- State the need for a dilated eye exam at diagnosis and an annual dilated eye exam thereafter.
- Describe the major symptoms and factors in prevention and treatment of kidney disease.
- State the importance of screening for urine protein.
- Describe the major symptoms and factors in prevention and treatment of neuropathy.
- State that diabetes may cause sexual dysfunction and identify resources for help.
- State how to prevent foot ulcers.
- State the value of foot exams at health care provider visits.
- Describe the purpose and procedure for monofilament testing.
- List self-care practices to prevent foot problems.
- Describe how to correctly trim toenails.
- Describe how to inspect and bathe the feet.
- Describe the correct treatment of minor cuts and bruises.
- Describe signs and symptoms of infection and when to seek care.
- List components of dental care.

Behavioral Objectives

- □ Make a plan for one thing s/he will do to reduce his/her risk for long-term diabetes complications.
- □ Demonstrate daily foot inspection and care.

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Evaluation Plan

Evaluation includes achievement of:

- Learning objectives identified in the education plan
- Participant defined behavioral goals and objectives
- Education program goals and objectives

Materials List

Videos:

Diabetes and Heart Disease (MF/AADE)
Diabetes Foot and Skin Care (MF/AADE)
Preventing Long-Term Complications of Diabetes (MF/AADE)

Models:

5.07 Semmes-Weinstein Sensory Monofilament (NIDDK)
Blood Vessels with Plaque (Nasco)
Body Apron (www.ideabetes.com)
Eye/Retina (Nasco)
Foot (Nasco)
Heart (Nasco)
Kidney (Nasco)
Oral Care Supplies (Actual)
Shoes (Actual)
Socks (Actual)
Teeth and Gums (Nasco)

Booklets/Pamphlets:

Diabetes and Periodontal Disease (National Institute of Dental Research)
Feet Can Last A Lifetime (NIDDK)
If You Have Diabetes You Are At Risk For Heart Attack And Stroke (NDEP)
Prevent Diabetes Problems (NIDDK)
Keep Your Diabetes Under Control
Keep Your Heart and Blood Vessels Healthy
Keep Your Eyes Healthy
Keep Your Kidneys Healthy

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Keep Your Nervous System Healthy
Keep Your Feet and Skin Healthy
Keep Your Teeth and Gums Healthy
Take Care of Your Feet for a Lifetime (NDEP)
Take Care Of Your Heart If You Have Diabetes (NDEP)

Handouts/Visuals:

Be Smart About Your Heart and Control the ABCs of Diabetes (NDEP)
Clinical Practice Recommendations (ADA, NDEP,SD)
Graph of Complication Reduction in DCCT/UKPDS (SD)
Local Resource List (SD)
Maine Tobacco Helpline (800-207-1230)
My Personal Care Card (ADA, NDEP, SD)
Nervous System (LWD)
Sexual Health Resource List (SD)
Shoe Buying Guide (PC, SD)
Smoking Cessation Resources (Maine CDC/Partnership For Tobacco Free Maine, SD)
Tobacco Treatment Medication Chart (www.tobaccoindependence.org)
What To Know Head To Toe (ADA)

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Preventing (Risk Reduction), Detecting, and Treating Chronic Complications

Learning Objective	Content	Instructor's Notes
State that controlling blood glucose, blood pressure and blood lipids reduces the chance of complications.	I. Introduction A. Review diabetes self-care behaviors, including reducing risks B. Review role of healthy eating/meal planning, physical activity, medication, and other self-care behaviors in diabetes control C. Review the goal of diabetes management to control blood glucose and prevent/delay complications II. Overview A. General 1.Individuals with both type 1 and type 2 diabetes are at risk for chronic complications B. Prevention of complications - general (details below with each complication) 1.Primary prevention a.Blood glucose, blood pressure and blood lipid control b.Eliminate contributing risks	Review learning objectives. Videos, models, handouts/visuals, discussion/whiteboard/ overhead, as appropriate, such as those listed below. Discussion: *Review blood glucose goals.*

Identify reasons for regular health monitoring. Identify contributing risks to diabetes complications including tobacco use.	2.Secondary prevention a.Blood glucose, blood pressure and blood lipid control b.Elimate contributing risks c.Screening for complications d.Standards of care e.Clinical practice recommendations f. Interventions to prevent progression 3.Tertiary prevention a.Blood glucose, blood pressure and blood lipid control b.Eliminate contributing risks c.Interventions to prevent end stage of complications and disability 4. Contributing Risks a.Tobacco use (1)Tobacco use increases risk of all complications (2)Explore current use/interest in quitting/readiness (3)Set goal—realistic (4)Behavioral quit plan (5) Medication options (6)Counseling options (7)Social support (8)Resources b.Obesity (1)Weight control options c.Inactivity (1)Physical activity options d. Alcohol	Booklet: *Keep Your Diabetes Under Control* Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.* Discussion: *Review meaning of "risks". Ask participants to brainstorm risks for diabetes complications and list on whiteboard. Have them identify personal risks they can change.* Handout: *Maine Tobacco Helpline* *Tobacco Treatment Medication Chart* *Smoking Cessation Resources*

	(1) Alcohol information/cessation options e.Other health problems (1)Screening (2)Regular visits with the health care team	
List the major complications of diabetes. Identify the organ systems particularly at risk from diabetes.	C. Types of complications – general (details below with each complication) 1.Vascular a.Macrovascular: (1)Coronary atherosclerosis (CAD, MI) (2)Cerebrovascular atherosclerosis (CVA, PVD) b.Microvascular: (1)Retinopathy (2)Nephropathy 2.Neuropathic a.Sensory (lower and upper extremities, neuropathic ulcer) b.Motor-foot deformities c.Autonomic (gastroparesis, diabetic diarrhea, neurogenic bladder, impotence,anhidrosis) 3.Mixed Vascular/Neuropathic: leg and foot ulcers 4.Infection 5.Periodontal disease	Discussion: *Ask participants what parts of the body may be affected by diabetes. (list on board)* Model:*Body Apron*
	III. Relationship of blood glucose control to chronic complications	
Describe the key outcomes of the DCCT.	A. Complication prevention studies 1.Diabetes Control and Complications Trial (DCCT)	Handout: *Graph of Complication Reduction in DCCT/UKPDS*

Describe the key outcomes of the UKPDS.	a.Six and one-half year study completed in 1993 of 1,441 subjects with type 1 diabetes b.Goal to evaluate the effect of glycemic control on development and progression of chronic complications (retinopathy, neuropathy, nephropathy) c.Two subject groups - conventional insulin therapy vs. intensive insulin therapy d.Results (1)GHb mean level for intensively managed group - 7.2% (2)GHb mean level for conventionally managed group - 9.1% (3)In intensively managed group (a)76% reduction for risk of developing retinopathy (b)60% reduction in occurrence of clinical neuropathy (c)39% reduction in nephropathy as evidenced by microalbuminuria e.Potential risks of intensive management (1)hypoglycemia (2)weight gain 2.United Kingdom Prospective Diabetes Study (UKPDS) for type 2 diabetes a.Large study at 23 research centers that began in 1977 in United Kingdom conducted with 5,102 subjects with newly-diagnosed type 2 diabetes b.Goal to document any health improvements resulting from lowering blood glucose and	

Identify strategies to decrease his/her risks for complications. **Describe self-care practices for preventing complications.** **Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.** Describe the prevention, recognition, and treatment of the major complications of diabetes. Describe the major symptoms and factors in prevention and treatment of cardiovascular and peripheral vascular disease.	blood pressure c. All subjects initially treated with medical nutrition therapy (MNT), observed for 3 months , then control assessed. At three months, groups randomly assigned: MNT only; insulin; sulfonylureas; metformin d. Results - intensive glycemic controlled subjects: (1) 25% reduction risk of retinopathy (2) 25% reduction risk of nephropathy (3) Insulin therapy did not cause atherogenicity (4) For every 1% reduction in GHb there was a 35% reduction in damage from retinopathy, neuropathy, and nephropathy (5) For every 1% reduction in GHb there was a 25% reduction in mortality rate (6) No direct effect of lower BG on cardiovascular complications (7) 56% reduction of risk of heart failure (8) 44% reduction of risk of stroke (9) 32% reduction of risk of death from diabetes (10) Three types of drugs used for glycemic control worked well to reduce blood glucose levels IV. Vascular A. Macrovascular (large blood vessel) disease 1. Risk Factors: a. Uncontrolled blood glucose	Video: *Minimizing Long-term Complications of Diabetes* Model: *Heart* *Blood Vessels with Plaque*

State the importance of screening for dyslipidemia. **Identify recommended and personal A1C, blood pressure and LDL cholesterol goals.**	b.Diabetes (1)Review recommended blood glucose and A1C goals; See *Monitoring Session* c.Hypertension: recommended blood pressure ≤ 130/80; screen each visit d.Hyperlipidemia: recommended total cholesterol level ≤ 200 mg/dl; HDL >45M/55F mg/dl; LDL - <100 mg, LDL <70mg with CV risk factors; triglycerides - <150 mg/dl; screen annually e. Personal A1C, BP and LDL goals (1) Patient and diabetes care team set (2)Personal goals may be different than recommended goals (3)Personal goals depend on age, current A1C/BP/LDL, diabetes management/care plan, ability to do self-care, etc. (4)May change (5)Use as guide for evaluating monitoring data f.Tobacco use: recommended cessation; screen each visit g.Obesity: recommended weight control; screen each visit h.Lack of physical activity: recommended physical activity; screen each visit i.Renal failure and microalbuminuria may contribute to risk of macrovascular disease; recommended management; screen annually j.Intervening to reduce risk factors improves	Booklet: *Keep Your Heart and Blood Vessels Healthy* Handout: *Be Smart About Your Heart and Control the ABCs of Diabetes* *What to Know Head to Toe*

	diabetes outcomes 2.Coronary artery disease a.Diabetes increases risk 2-3 fold in men, and 3-4 fold in women b.May not have symptoms due to neuropathy ("Silent MI") or atypical symptoms c.Low dose aspirin of benefit with evidence of macrovascular disease and those considered high risk for cardiovascular disease d.Self-care/preventive measures: (1)Screen for and reduce risk factors (2)Follow diabetes management /care plan including self-care behaviors; healthy eating, being active, monitoring, taking medication, problem solving, healthy coping and reducing risks. (3)Daily aspirin therapy and prescribed medication to achieve blood glucose, blood pressure, blood lipid and weight control (4)Regular diabetes care which includes evaluation for CAD (5)Observe and report symptoms (6)Understand and discuss risks/benefits of recommended therapies/ options for treatment/ course of disease (7)Obtain screening and monitoring tests at recommended frequency (8)Tobacco cessation 3.Cerebrovascular disease a.Diabetes increases risk 2-6 fold	Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.* Handout: *Smoking Cessation Resources*

	b.Lower risk by modifying risk factors c.Symptoms may be confused with hypoglycemia symptoms d.Self-care/preventive measures: (1)Screen for and reduce risk factors (2)Follow diabetes management /care plan including self-care behaviors to achieve blood glucose, blood pressure, and weight control. (3)Regular diabetes care which includes evaluation for cerebrovascular disease (4)Observe and report symptoms (5)Understand and discuss risks/benefits of recommended therapies/ options for treatment/ course of disease (6)Obtain screening and monitoring tests at recommended frequency (7)Tobacco cessation 4.Peripheral vascular disease a.Diabetes accounts for >50% of all non-traumatic amputations b.Often coexists with impaired sensation from neuropathy c.Leads to pain and infection d.50-75% of all peripheral vascular disease due to diabetes is preventable, including amputations e.Related to age, duration of diabetes, elevated blood glucose levels and smoking f.Detection (1)Intermittent claudication present	

State that high blood pressure increases the risk of eye, kidney, and heart disease. State the need for control of high blood pressure. State the need for regular blood pressure monitoring.	(2)Decreased pulses in lower extremities (3)Diagnosed by noninvasive Doppler studies g.Treatment (1)Exercise (2)Medication (vasodilators) (3)Surgery h.Self-care/preventive measures: (1)Screen for and reduce risk factors (2)Follow diabetes management/care plan including self-care behaviors to achieve blood glucose and blood lipid control (3)Regular diabetes care which includes evaluation for PVD (4)Observe and report symptoms (5)Understand and discuss risks/benefits of recommended therapies/ options for treatment/ course of disease (6)Obtain screening and monitoring at recommended frequency (7)Foot Ulcer Prevention and Foot Care (See below) (8)Tobacco cessation 5.Hypertension a.Asymptomatic b.2-3 times more common in people with diabetes c.Kidney disease may be a contributing factor d.Will aggravate diabetic eye disease, kidney disease and cardiovascular disease e.Detection (1)Monitor blood pressure (BP) as	Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.* Handout: *Smoking Cessation Resources* Discussion: *Ask participants if they know their last BP reading and if*

	recommended by primary care provider and at least each visit (2)Maintain blood pressure at < 130/80 f.Treatment (1)Weight reduction (2)Nutritional considerations (a)Improve glycemic control (b)Normalize blood pressure (c)Reduce hyperlipidemia (d)Moderate sodium intake (e)Roles of calcium, magnesium and potassium currently being studied (f) Carbohydrate intake is individualized (g)High fiber (h)Reduce saturated fat to <10% (3)Alcohol: <2 oz ethanol/day (4)Physical activity - begin gradually after appropriate evaluation (5)Tobacco cessation (6)Pharmacologic treatment (a)Recommended if unable to lower blood pressure <130/80 with non-pharmacologic therapy (b)Need to balance benefits of medicine with side effects (notify health care provider of side effects) (c)Maintain treatment regimen (do not discontinue without health care provider approval) (d)Drug regimens often need to be adjusted. Important to stay in touch with	*they record it. Refer to My Personal Care Card.*

	health care provider for monitoring (e)Potential complications of anti-hypertensive drugs: 1.Deterioration of blood glucose control 2.Lower or raise blood potassium levels 3.Hyperlipidemia 4.Impotence and/or decreased libido 5.Exacerbation of coronary heart disease 6.Orthostatic hypotension 7.Depression 8.Impaired insulin release with hyperglycemia 9.Blunted symptoms of hypoglycemia 10.Hypertension associated with hypoglycemia g.Self-Care/Preventive measures: (1)Screen for and reduce risk factors (2)Follow diabetes management/care plan including self-care behaviors to achieve blood glucose and blood pressure control (3)Regular diabetes care which includes evaluation of blood pressure (4)Observe and report symptoms (5)Understand and discuss risks/benefits of recommended therapies/ options for treatment/ course of disease (6)Obtain screening and monitoring tests at recommended frequency (7)Tobacco cessation	Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.* Handout: *Smoking Cessation Resources*

Identify strategies to decrease his/her risks for complications. **Describe self-care practices for preventing complications.** **Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.** Describe the major symptoms and factors in prevention and treatment of eye disease.	V. Microvascular (small blood vessel) disease A. Retinopathy 1. Definition: Damage to the blood vessels in the retina (tissue at the back of the eye) that transmits visual messages via the optic nerve to the brain 2. Causes various degrees of visual loss, including blindness 3. Early stages: background (preproliferative) retinopathy a. Blood vessels in retina become enlarged, ballooning outward and leaking fluid, which can collect and cause swelling in the retina b. If fluid collects in the macula (central part of retina), blurred vision results - occurs in 5% of cases of background retinopathy c. Generally asymptomatic d. 80% of eyes with retinopathy do not progress beyond this stage 4. Proliferative retinopathy a. Abnormal new vessels sprout and grow along the surface of the retina b. New vessels are fragile and may rupture and bleed c. Scar tissue may form, pulling on retina, detaching it from back of eye d. May cause severe visual loss or permanent blindness e. Can be aggravated by isometric exercises that raise intraocular pressure.	Model: *Eye/Retina* Booklet: *Keep Your Eyes Healthy* Handout: *What to Know Head to Toe*

State the need for a dilated eye exam at diagnosis and an annual dilated eye exam thereafter.	5.Risk factors: a.Uncontrolled blood glucose b.Hypertension c.Tobacco use 6.Detection a.Generally asymptomatic until permanent damage is done b.Requires eye exam through dilated pupils c.Recommended annual screening for eye disease if type 2, or if type 1 and have had diabetes >5 years d.Annual screening involves (1)Patient history (2)Measurement of visual acuity and intraocular pressure (3)Examination through dilated pupils (4)Photographs when indicated 7.Treatment a.Better outcomes when treatment is undertaken before visual symptoms develop b.Laser photocoagulation: Concentrated beams of light aimed at disease spots on retina (1)Reduces by 60% chances of severe visual loss in people with moderate and advanced proliferative retinopathy and high risk characteristics (2)Benefit for people with preproliferative and early proliferative retinopathy has not been established c.Vitrectomy: Surgical removal of bloody	Discussion: *Ask participants when they last had a dilated eye exam. Refer to My Personal Health Care Card.*

	vitreous and release of traction on retina d.Control hypertension e.Tobacco cessation f.Rehabilitation resources for visually impaired 8.Self-care/preventive measures: a.Screen for and reduce risk factors b.Follow diabetes management/care plan including self-care behaviors to achieve blood glucose, blood pressure and blood lipid control. c.Regular diabetes care which includes evaluation for eye disease d.Diagnosis and treatment of high blood pressure e.Observe and report symptoms f.Understand and discuss risks/benefits of recommended therapies/ options for treatment/ course of disease g.Annual dilated eye examination by a qualified eye care provider h.Tobacco cessation i.Report any changes in vision promptly B. Other eye-related problems 1.Glaucoma a.Increased intraocular pressure b.People with diabetes have a slightly greater risk for the development of glaucoma 2.Cataracts a.Twofold risk for people with diabetes b.Risk related to level of blood glucose control	Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.* Handout: *Smoking Cessation Resources* Discussion: *Ask participants if they have noticed changes in vision with fluctuations in blood glucose.*

	3.Blood glucose control effect on vision a.High or low blood glucose levels can affect vision b.Results from changes in hydration of the crystalline lens c.Blood glucose control needs to be stabilized before visit to eye doctor for refraction	
Describe the major symptoms and factors in prevention and treatment of kidney disease.	C. Nephropathy 1.Prevalence a.20-30% of individuals with type 1 develop nephropathy b.20-30% of individuals with type 2 develop nephropathy (higher in some groups) 2.Risk factors a.Uncontrolled blood glucose b.Hypertension may precipitate the onset and accelerate the process of renal disease c.Neurogenic bladder causes urinary retention and obstruction d.Urinary infection and obstruction e.Drugs toxic to kidneys (i.e. chronic analgesic abuse, X-ray dye) 3.Detection and referral a.Annual monitoring of renal function for all persons with diabetes (1)Urinalysis (glucose, ketones, protein)	Model: *Kidney* Booklet: *Keep Your Kidneys Healthy*
State the importance of screening for urine protein.	(2)Screening for Microalbuminuria albumin/creatinine ratio (ACR) in a spot urine sample in individuals with type 1 diabetes 5 years after diagnosis and in	Discussion: *Ask participants when they last had microalbuminuria measured. Refer to My*

	individuals with type 2 diabetes beginning at diagnosis; rescreen annually (3)Serum creatinine with calculated glomerular filtration rate (GFR) b.Refer to nephrologist if persistent proteinuria, elevated serum creatinine or blood urea nitrogen (BUN), or hypertension unresponsive to treatment 4.Treatment a.Blood pressure control: 50% of all end-stage renal disease due to diabetes is estimated to be preventable with control of hypertension: single most important factor in prevention (ace inhibitors or ARBs) b.ACE inhibitor (angiotensin-converting enzyme) or ARB (angiotensin receptor blocker) for microalbuminuria c.Blood glucose control d.Treat infections e.Low protein diet (0.8 gm/kg or 10% of daily calories) may help f.End-stage kidney disease treatable with dialysis and renal transplantation 5.Self-care/preventive measures: a.Screen for and reduce contributing risk factors b.Follow diabetes management /care plan including self-care behaviors to achieve blood glucose and blood pressure control c.Regular diabetes care which includes evaluation for kidney disease and contributing	*Personal Care Card.* Discussion: *Discuss use of ACE inhibitors and ARBs. Poll participants to determine if they are using.* Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card*

	risks d.Observe and report symptoms, such as suspected urinary tract infection e.Understand and discuss risks/benefits of recommended therapies/options for treatment/ course of disease f.Obtain annual screening and monitoring tests (see above) g.Limit sodium h.Report UTI symptoms i.Tobacco cessation	*Participant completes with assistance.* Handout: *Smoling Cessation Resources*
Identify strategies to decrease his/her risks for complications. **Describe self-care practices for preventing complications.** **Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.** Describe the major symptoms and factors in the prevention and treatment of neuropathy.	VI. Neuropathic A. Sensorimotor 1.Peripheral neuropathy a.Can be bilateral or unilateral; wide variety of manifestations b.More common in lower extremities but can occur in upper extremities c.Can cause lack of sensation and/or pain d.Risk factors: (1)Uncontrolled blood glucose e.Detection - foot exam by health care provider and use of Semmes-Weinstein monofilaments to test sensitivity (see Prevention of Foot Ulcers below) f.Treatment (1)Treatment with medications in experimental stage (phenytoin, carbamazepine, antidepressants, aldose reductose	Handout: *Nervous System* Booklet: *Keep Your Nervous System Healthy*

	inhibitors, gabapentin) (2)Symptomatic treatment for pain (3)Prevention of late complications (i.e. foot ulceration, unrecognized trauma, Charcot's Joint) g.Self-care/preventive measures: (1)Screen for and reduce contributing risk factors (2)Follow diabetes management/care plan including self-care behaviors to achieve blood glucose control (3)Regular diabetes care which includes evaluation for neuropathy (4)Observe and report symptoms (5)Understand and discuss risks/benefits of recommended therapies/options for treatment/ course of disease (6)Obtain annual screening and monitoring tests (see above) B. Autonomic neuropathy 1.General: Often occurs along with peripheral neuropathy 2.Gastroparesis - manifested by nausea, vomiting and abdominal discomfort 3.Diabetic diarrhea a.Usually intermittent b.Frequent loose stools, particularly after meals and at night 4.Neurogenic bladder - gradual loss of ability to void	Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.*

	5.Impaired cardiovascular reflexes a.Orthostatic hypotension b.Increased heart rate 6.Impotence 7.Anhidrosis – lack of sweating in feet leading to dry, cracked feet 8.Risk factors: a.Uncontrolled blood glucose 9.Detection: a.Usually based on clinical evaluation 10.Treatment a.Blood glucose control b.Medical management of symptoms c.Some drug therapies may be helpful for pain d.Physical therapy often helpful 11.Self-care/preventive measures: a.Screen for and reduce contributing risk factors b.Follow diabetes management /care plan including self-care behaviors to achieve blood glucose control c.Regular diabetes care evaluation of neuropathy d.Observe and report symptoms e.Understand and discuss risks/benefits of recommended therapies/options for treatment/ course of disease f.Obtain annual screening and monitoring tests at recommended frequency C. Sexual Health and Diabetes 1.Definition: “Sex” is the intimate relationship	Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.* Video: *Sexual Health and Diabetes*

State that diabetes may cause sexual dysfunction and identify resources for help.	between adults. "Sexuality" is your sense of self as a man or woman, and the attitudes and behaviors that relate to your sense of self 2.Impact of diabetes on women's sexual health a.Potential for irregular or delayed menstrual cycles b.Elevation or decrease in blood glucose levels during menstrual period c.Pregnancy concerns (1)High blood glucose levels before conception and during pregnancy produce risk for premature births, high birth-weight babies, infants with birth defects, and infant deaths (2)For best possible pregnancy outcomes women need to achieve near-normal blood glucose control before conception and during pregnancy d.Birth control options and consequences e.Menopause (1)Varying blood glucose levels (2)Estrogen replacement benefits and concerns f.Vaginitis g.Decreased libido h.Vaginal dryness, painful intercourse i.Hypoglycemia during/after sexual activity j.Treatment of sexual dysfunction in women (1)Regular check-ups with gynecologist (2)Optimum control of blood glucose (3)Medications for vaginitis	(Show video and open for discussion) Handout: *Sexual Health Resource List*

	(4)Water-soluble lubricating gels (5)Postmenopausal hormone replacement (6)Relaxation techniques 3.Impact of diabetes on men's sexual health a.Potential for delayed onset of puberty and sexual maturation b.Retrograde ejaculation c.Potential for hypoglycemia during/after sexual activity d.Erection dysfunction (impotence) occurs in 40-60% of all men who have diabetes caused by: (1)Damage to autonomic nerves (2)Drugs (i.e., blood pressure medications, tranquilizers) (3)Decreased testosterone levels (4)Alcohol (5)Hardening of arteries in pelvis (6)Psychological factors (7)Tobacco Use e.Treatment of sexual dysfunction in men (1)Discuss concerns with health professional (2)Optimum control of blood glucose (3)Hormone replacement (4)Psychological counseling (5)Vacuum therapy (6)Penile injection (7)Penile implant (8)Surgery (9)Viagra, Cialis, Levitra f.Self-care:	

	(1)Screen for and reduce contributing risk factors (2)Follow diabetes management /care plan including self-care behaviors to achieve blood glucose control (3)Regular diabetes care including evaluation of neuropathy and sexual health (4)Observe and report symptoms (5)Understand and discuss risks/benefits of recommended therapies/options for treatment/ course of disease (6)Obtain annual screening and monitoring tests (see above) (7)Tobacco cessation 4.Importance of men and women with diabetes having open communication with partners and health care team regarding sexual concerns	Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.* Handout: *Smoking Cessation Resources*
Identify strategies to decrease his/her risks for complications. **Describe self-care practices for preventing complications.** **Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.**	VII. Mixed vascular/neuropathic complications A. Includes leg and foot ulcers 1.General a.Decreased circulation causes slow healing of injuries b.Peripheral neuropathy (diabetic nerve disease in leg and foot) causes decreased sensation and makes foot liable to undetected trauma c.Early discovery and treatment of foot ulcers, injuries or other problems can prevent serious	Model: *Foot* *5.07 SW monofilament* Booklet: *Keep Your Feet and Skin Healthy* *Take Care of Your Feet for a Lifetime*

State how to prevent foot ulcers.	complications (1)Untreated problems can lead to infection and potentially to amputation (2)Most amputations from diabetes are preventable with appropriate care B. Foot ulcers 1.Risk factors: a.Neuropathy b.Altered foot biomechanics and deformity c.Peripheral vascular disease d.Previous ulceration or lower extremity amputation e.Long-duration diabetes f.Poor glycemic control g.Hypertension h.Dyslipidemia i.Microvascular complication j.Tobacco use 2.Prevention: a.Screening for high risk conditions b.Risk categorization based on: (1)Sensory neuropathy testing with 5.07 Semmes-Weinstein monofilament annually (2)Inspection for deformity (3)Palpation of pedal pulses (4)Hx ulceration and/or amputation c.Timely referral for preventive services for those at risk 3.Treatment a.Target interventions to stop pathologic	*Feet Can Last a Lifetime* Handout: *What to Know Head to Toe* Demonstration: *Perform monofilament screening exam on participant or foot model.*

State the value of foot exams at health care provider visits. Describe the purpose and procedure for monfilament testing. List self-care practices to prevent foot problems.	process in high risk patients b.Timely referral for treatment/ podiatric care/ vascular surgery c.Blood glucose control d.Blood pressure and lipid control e.Tobacco cessation f.Therapeutic footwear 4.Self-care/preventive measures: a.Self-care behaviors to support blood glucose, blood pressure, and lipid control b.Foot inspection, nail care, footwear selection and use, and reporting problems c.Modify environment to prevent minor foot trauma (night lights, clear walking space) d.Regular diabetes care including evaluation of neuropathy, BP, lipids e.Observe and report symptoms f.Understand and discuss risks/benefits of recommended therapies/options for treatment/ course of disease g.Obtain annual screening and monitoring tests at recommended frequency h.Maintain tobacco cessation C. Foot care 1.General a.Protect feet from exposure to extreme heat or cold (1)Avoid heating pads, electric blankets, hot water bottles and microwave warmers which can cause burns	Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.* Handout: *My Personal Care Card* *Participant completes with assistance.* Handout: *Smoking Cessation Resources* Video: *Diabetes Foot and Skin Care: In Step*

Describe how to correctly trim toenails. Describe how to inspect and bathe feet.	(2)Wear loose-fitting socks to bed if feet are cold (3)Check bath temperature with elbow, not feet b.Do not prop feet on wood stove or in front of fire c.Inspect feet after exposure to extreme heat or cold d.Avoid going barefoot indoors and outdoors; appropriate footwear for cold and snow e.Put sunscreen on tops of feet when feet exposed to sun f.Remove shoes and socks when visiting physician as a reminder to check feet g.Exercise legs to improve circulation h.Avoid tight socks or other clothing that could cut off circulation i.Do not use over-the-counter remedies to treat corns/calluses j.Cut toenails straight across, round edges with a file, do not cut into corners; may be easiest to trim after bathing k.Shake out or feel inside shoes with hand for foreign objects before putting them on l.Visit podiatrist as necessary 2.Daily care of feet a.Wash feet daily with mild soap and warm water and gently dry with soft towel, especially between the toes. Do not soak feet and do not use strong antiseptics or harsh chemicals	Role play: *Removing shoes and socks at health care provider visit* Activity: *Patient demonstration of self-foot inspection.*

Describe the correct treatment of minor cuts and bruises.	b.Look at tops and bottoms of feet, and between toes, every day for cracks, corns, calluses, red spots, cuts, bruises, sores, etc. Use a mirror or ask a family/friend to inspect bottoms of feet if needed c.If skin is dry (especially in winter) use emollient lotion (not oil-based and without alcohol) to keep feet soft. Do not put lotion between toes. If feet sweat, use powder d.Run your hands over your feet at least once per day to check for heat or other changes e.If toes overlap, sheepskin placed between toes can prevent blisters f.Treat any injuries immediately 3.Reporting foot problems a.Report any injuries or foot problems to health care provider right away b.Minor noninfected wounds: (1)Can be treated by washing with soap and water, using a mild non-irritating antiseptic solution as recommended by health care provider, daily dressing changes, and foot rest (2)Avoid strong antiseptics and harsh chemicals, including Epsom salts, boric acid, and iodine (3)Check area twice daily; have family/friend check if unable to see the area (4)Consult health care provider if area does not improve in 24 hours (5)Call health care provider if signs of	

	infection such as redness, swelling, heat, discharge, and/or pain c.Foot deformities, infected lesions need consultation with a diabetes foot care specialist 4.Footwear a.Wear shoes and socks that fit properly. Shoes should fit length and width and allow toes to wiggle. Wear socks or stockings with shoes b.Select socks made of natural fibers that allow feet to breathe; avoid mended or seamed socks c.Avoid poorly fitting shoes which are a common cause of foot trauma; have feet measured before buying a new pair d.Shop for new shoes in afternoon when feet are largest e.Break in new shoes slowly by wearing them only one or two hours at a time f. Avoid high heels, sandals and pointed toe shoes g.Obtain orthotic shoes, if necessary (Medicare may assist with payment)	Model: *Shoes/Socks* Activity: *Demonstrate how to outline foot on paper to use for checking shoe size*. Handout: *Shoe Buying Guide*
Identify strategies to decrease his/her risks for complications. **Describe self-care practices for preventing**	VIII. Infections A. Importance of skin care 1.Decreased circulation and elevated blood glucose causes slow healing of injuries 2.Early discovery and treatment of skin	

complications. **Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.**	breakdown can prevent serious complications a. Untreated problems can lead to infection and potentially the need for surgical closure of a wound b. Most infections can be prevented with proper care B. Prevention of infections 1. Keep blood glucose in normal range 2. Bathe or shower regularly 3. Use emollient lotion (not oil-based and without alcohol) to lubricate dry skin 4. Promptly treat all cuts or broken skin 5. Use caution while shaving being careful not to break skin 6. Contact health care providers for treatment of infection 7. Wash daily around rectum and vagina for prevention of urinary tract infections 8. Wear cotton underwear to absorb moisture 9. Drink fluids and urinate every 3-4 hours to help flush out bacteria	
Describe signs and symptoms of infection and when to seek care.	C. Detection of infections 1. Infections are common and serious in individuals with diabetes 2. Signs of infection are pain, redness, warmth of area, swelling, discharge, and fever 3. First sign of infection may be elevated blood glucose level 4. Infections can occur without open cuts or	

	injuries 5.People with diabetes may have no "outward" signs of infection	
Identify strategies to decrease his/her risks for complications. **Describe self-care practices for preventing complications.** **Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.**	IX . Periodontal disease A. Importance of dental care 1.Increased risk of periodontal disease a.Causes of periodontal disease include: thickening of blood vessels, abundance of bacteria in the mouth, and uncontrolled diabetes b.Uncontrolled periodontal disease can lead to plaque build up, infected gums, and tooth loss B. Detection 1.Dental Infections a.Bleeding as a result of brushing b.Gums pulled away from teeth c.Pus between teeth and gums d.Bad breath e.Loose teeth f.Change in how bridge, partial plate, or dentures fit C. Self-care/preventive measures 1.Keep blood glucose in normal range 2.Brush after meals 3.Use fluoride toothpaste or mouth rinse 4.Floss daily 5.Examine gums daily - note any bleeding or sores on gums	Model: *Teeth and Gums* *Oral Care Supplies* Booklet: *Keep Your Teeth and Gums Healthy* *Diabetes and Periodontal Disease* Handout: *Clinical Practice Recommendations* *Discuss key tests and exams to screen for and monitor complications.*
List components of dental care.		

		6. Check with dentist at first sign of infection 7. Inform dental health personnel that you have diabetes 8. Regular dental visits every six months 9. Follow any individualized instructions for daily care 10. If you cannot eat regular meals due to dental work or tooth problems, follow sick day guidelines for soft or liquid diet	Handout: *My Personal Care Card* *Participant completes with assistance.*

Behavioral Objective	**Instructor's Notes**
Make a plan for one thing s/he will do to reduce his/her risk for long-term diabetes complications. Demonstrate daily foot inspection and care. .	Review behavioral objectives. Making behavior changes, such reducing risks for long-term complications, is easier when a person: • Gathers information • Makes plans • Breaks plans down into small steps Assist participants with applying concepts learned in the session to his/her personal diabetes care/self-care, including an action plan that identifies at least one self-selected goal and the

	knowledge and skills to achieve it. Handout: *Personal Goal(s)/Behavior Change Plan* Review Tab: *Promoting Health and Behavior Change* for information on goal setting and action plans as needed.

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Preventing (Risk Reduction), Detecting, and Treating Chronic Complications

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Appendix

Definitions

Advisory/Oversight Committee – a method that seeks guidance and counsel from community representatives, health care administrators and professionals regarding diabetes education.

Ambulatory Diabetes Education and Follow – Up (ADEF)/Diabetes Self-Management Training (DSMT) Program – a quality diabetes education program in Maine that meets the National Standards for Diabetes Self- Management Education.

Annual Plan – documentation that describes program goals, objectives, implementation process and methods, resource requirements/budget, consumer access and evaluation methods. Diabetes team uses the annual plan to monitor activities and outcomes.

Behavioral Objective – medical record documentation of a patient identified behavior change. The individual behavioral objective should be realistic and measurable.

CEU – continuing education unit. Documented in hours of continuing education activity. Includes CEU from accredited organizations and certificates of attendance at diabetes related in-services, regional meeting, etc.

Community – the social, cultural, political and geographic environment within which the ADEF Program offers services.

Consistent – diabetes team members use the same terms, materials, and descriptors when educating the community, individuals, or families; “everyone is getting the same message.”

Continuous Quality Improvement (CQI) – a cyclic series of steps designed to enhance diabetes self-management education processes leading to improved participant and diabetes self-management education outcomes. Steps include identifying opportunities for improvements, collecting data, analyzing data, choosing new approaches based on data analysis, developing concepts and processes for change, implementing processes, and evaluation of new processes and improvement of processes.

Coordinated – diabetes team works together in program planning, implementation, and evaluation.

Coordinator – team member responsible for overseeing the planning, implementation and evaluation of diabetes self-management education and has the appropriate academic and experiential credentials to fulfill the responsibility.

Criteria – a rule or test upon which a judgment or decision can be based.

Curriculum—a coordinated set of courses and educational experiences.

Educational Needs Assessment – query of individual with diabetes to determine current status and needs related to diabetes self-management education including laboratory measurements, medical history, current therapy, social supports, cultural influences, learning style, risk factors, health beliefs and attitudes, health behaviors, and skills.

Educational Plan – medical record documentation of individual assessment, learning and behavioral objectives and evaluation.

Evaluation – the act of examining diabetes self-management education processes and outcomes to ascertain whether the desired goals and objectives were achieved.

Goal – a statement that defines program aim or purpose.

Individualized Educational Assessment – the process used to identify learning needs with an individual; includes relevant medical history, diabetes history, risk factors, cultural influences, health beliefs and attitudes, barriers to learning, health behavior goals, support systems and other socioeconomic factors. Most information should be gathered during an interactive interview with the diabetes educator.

Instructional Material – any material used in educational programming including pamphlets, audio-visuals, models, etc.

Instructors – health care professional with knowledge, experience, and demonstrated skill in diabetes self-management education process.

Learning Objective – medical record documentation of diabetes education aim and purpose based on individual assessment.

Lost To Follow-Up – individual involved in diabetes self-management education does not return for follow-up.

Participant – person with diabetes and/or family and significant other.

Primary Prevention – lifestyle choices such as healthy eating, regular physical activity, and smoking cessation to prevent development of chronic disease.

Program Manual – documentation that describes policies, procedures and other systems created to enhance diabetes education within the community.

Program Objective – a statement that defines how programs will achieve the aim or purpose.

Resources – materials, systems, professional consultation, technical or public health services available in community to enhance, support or assist diabetes self-management.

Secondary Prevention – lifestyle choices such as healthy eating, regular physical activity, smoking cessation and other medical therapies to prevent development of complications associated with chronic disease.

Self-Management Education—ongoing process of facilitating the knowledge, skill and ability necessary for diabetes self-care.

Self-Management Support—activities to assist the individual with diabetes to implement and sustain the ongoing behaviors needed to manage their illness. Support can be behavioral, educational, psychological and/or clinical.

Stakeholders – community members, individuals and families eligible for diabetes education services.

Standard – a delineation of acceptable levels of practice consisting of qualitative and quantitative parameters utilized in evaluation.

Surveillance – data obtained within a set period (quarterly, annually, weekly, etc.).

Target Population – that group of individuals and families who have the characteristics that the diabetes program defines as program participants (youth, people with neuropathy, etc).

Tertiary Prevention – lifestyle choices such as healthy eating, regular physical activity, smoking cessation and other prescribed medical therapies to promote quality of life for individuals with chronic disease and complications.

Appendix

Height Conversion Chart

The following chart provides you with the conversion from "FEET-INCHES" to "INCHES".

FEET-INCHES	INCHES	FEET-INCHES	INCHES
3'-0"	36"	5'-0"	60"
3'-1"	37"	5'-1"	61"
3'-2"	38"	5'-2"	62"
3'-3"	39"	5'-3"	63"
3'-4"	40"	5'-4"	64"
3'-5"	41"	5'-5"	65"
3'-6"	42"	5'-6"	66"
3'-7"	43"	5'-7"	67"
3'-8"	44"	5'-8"	68"
3'-9"	45"	5'-9"	69"
3'-10"	46"	5'-10"	70"
3'-11"	47"	5'-11"	71"
4'-0"	48"	6'-0"	72"
4'-1"	49"	6'-1"	73"
4'-2"	50"	6'-2"	74"
4'-3"	51"	6'-3"	75"
4'-4"	52"	6'-4"	76"
4'-5"	53"	6'-5"	77"
4'-6"	54"	6'-6"	78"
4'-7"	55"	6'-7"	79"
4'-8"	56"	6'-8"	80"
4'-9"	57"	6'-9"	81"
4'-10"	58"	6'-10"	82"
4'-11"	59"	6'-11"	83"

Appendix

History of the Maine Ambulatory Diabetes Education and Follow-up (ADEF) Program

The following brief history of the Maine ADEF Program will provide the new ADEF Program instructor with a perspective on the history and evolution of the Program.

Why and how was the Maine ADEF Program created?

1974 National Commission on Diabetes Mellitus created the National Diabetes Advisory Board (NDAB) to be responsible for setting Congress' agenda for reducing the burden of diabetes in the nation. The NDAB's first action was to provide funding to the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia to establish state-based diabetes control programs.

1977 Maine was one of ten states to receive grant funds to establish a state-based Diabetes Control Program (DCP). All states were given the broad mandate to "...plan, develop and implement activities designed to reduce the morbidity, mortality and associated cost burdens of diabetes mellitus within the state..."

1978 Maine DCP conducted a needs assessment of diabetes resources statewide, as well as an audit of hospital medical records for diabetes-related hospitalizations. Results of the assessment revealed that only two hospitals were providing outpatient diabetes education services. Other audit findings included:

- 17% of diabetes-related hospitalizations were due to lack of knowledge and self-management skills
- 10% of diabetes-related hospitalizations had length-of-stay extended for diabetes education
- 20% of diabetes-related hospitalizations represented a readmission within the same year for the same or similar diabetes problems

1978 Maine DCP created a Diabetes Mellitus Task Force to design an outpatient diabetes education and follow-up program. This program became the Maine Model Ambulatory Diabetes Education and Follow-up Program (ADEF) Program. Maine DCP staff simultaneously designed a Reimbursement Pilot Study of the Model ADEF Program, which included reimbursement of the ADEF Program by BlueCross BlueShield of Maine (BCBSME), Maine Medicaid, and Medicare over a three-year period.

1980 Maine DCP implemented the Model ADEF Program at over thirty sites representing hospitals, rural health centers, and home health agencies statewide. Preassessment and one-year follow-up data were collected and analyzed.

1983 In November, the Maine DCP prepared a Final Report documenting the results of the

reimbursement pilot study to the BCBSME Board of Directors. The study results documented a 32% reduction in hospitalizations and length of stay for a sample of 813 ADEF Program participants. Based on the report results of the pilot, BCBSME made reimbursement of the ADEF Program a permanent policy for their regular members. Maine was the first state to adopt such a policy. In addition, Maine Medicaid and Medicare Intermediary continued their coverage of the program beyond the pilot period.

1983 Beginning in 1983, and continuing through the present, the Maine DCP is responsible for ensuring quality and consistency of the ADEF Program at the participating education sites. DCP staffs developed and utilize the ADEF Program Manual, New Instructor Program, and ADEF Program Data Forms to assist in associated quality assurance activities.

1996 In July, the State of Maine Legislature enacted Public Law 592 (24 MRSA AN ACT TO *require that Diabetes Supplies and Self Management Training be covered by Health Insurance Policies)* mandating all individual and group health insurance policies (delivering services in Maine) to cover subscribers with either type 1 or type 2 diabetes mellitus for the following physician certified services and equipment: DCP's ADEF Program; insulin; oral hypoglycemic agents; monitors; test strips; syringes; and lancets. Exempt from P.L. 592 are Medicaid, Medicare, Medicare Supplemental policies, and other limited benefit health insurance policies and contracts such as companies and unions that self-fund their insurance plans.

2005 All ADEF/DSMT Program sites required to obtain American Diabetes Association (ADA) Education Recognition Program status to assure quality standards.

2009 American Association of Diabetes Educators (AADE) creates the Diabetes the Education Accreditation Program (DEAP) and adds another option that helps DSMT programs to diversify their program delivery, maintain standards of care via the AADE recognition structure, and maintain reimbursement for providing education.

Why do state-certified DSMT Program sites apply for national-certification for meeting the *National Standards for Diabetes Self-Management Education and Support*?

1983 National Diabetes Advisory Board (NDAB) developed *National Standards for Diabetes Patient Education Programs* representing group consensus among the American Association of Diabetes Educators, American Diabetes Association, American Dietetic Association, Centers for Disease Control and Prevention, Department of Defense, Department of Veterans Affairs, Diabetes Research and Training Centers, Indian Health Service, and the Juvenile Diabetes Foundation.

1984 NDAB Initiated a pilot study to develop review criteria to evaluate an n education program's conformance with the *National Standards*. Maine DCP piloted the review criteria at the ADEF Programs sites to evaluate the criteria's applicability in a rural state.

1986 American Diabetes Association (ADA) became the organization responsible for administration of a certification process for programs that meet the *National Standards for Diabetes Education Programs.* The ADA certification process [Education Recognition Program (ERP)] is modified as current *National Standards* are issued. In addition, the application process has greatly evolved over time, with the 6th Edition Application (instituted in 2000) conducted on-line via the ADA website (www.diabetes.org), and accompanied by an application fee.

1987 The Maine Diabetes Control Program (DCP) Advisory Committee recommended that all program sites become ADA Recognized Programs by 1990, and charged DCP staff to assist sites with this process. While DCP staff worked with sites throughout 1987 and 1988 to prepare for Recognition application, the following observations were made:

- ADA application was complicated, time consuming and expensive
- ADA application process facilitated administrative support for the site's diabetes program and provided national recognition for a quality diabetes program
- ADA Recognition status did not improve a Maine site's success in obtaining reimbursement from commercial insurance companies for the ADEF Program

1989 DCP Advisory Committee amended their recommendation from "requiring" to "encouraging" ADEF Program sites to become ADA Recognized Programs. Further, they recommended that the ADEF Program be revised to ensure consistency with the *National Standards.*

1990 DCP issued a revised ADEF Program Manual that defined minimum roles and responsibilities required of all sites delivering the ADEF Program, and ensured program consistency with the *National Standards.*

1993 NDAB created a Task Force to review and revise the 1983 *National Standards.* The revised *Standards* were issued in 1995.

1994 National Diabetes Advisory Board was de-commissioned by Congress. Discrete responsibilities were assigned to existing organizations, including the Division of Diabetes Translation/ Centers for Disease Control and Prevention's Technical Advisory Committee (TAC).

1999 Health Care Financing Administration (HCFA) issued proposed rules for the uniform coverage of outpatient diabetes self-management training services (Federal Register, February 11, 1999, Vol. 64, Number 28). These rules were under public review and federal revision for almost two years. During this time, the Maine Medicare Fiscal Intermediary was allowed to waive the proposed rules, and continue Medicare coverage of providers that were state-certified ADEF Program providers before July 1, 1998.

2000 In May, the NDAB-created Task Force issued revised diabetes education standards called *National Standards for Diabetes Self-Management Education* (Diabetes Care, Vol. 23, No. 5, page 682, May 2000).

2000 Health Care Financing Administration (HCFA) issued final rules for the implementation of Section 4105 of the Balanced Budget Act of 1997 to expand Medicare coverage for outpatient diabetes self-management education (DSME) and training (Federal Register December 29, 2000, Volume 65, Number 251). These rules were implemented on February 27, 2001. The final rules include a variety of restrictions in access and eligibility associated with coverage of DSME, including the requirement that providers of the education must be "…accredited by a HCFA-approved accreditation organization." As of February 2001, the only HCFA-approved accreditation organization was the American Diabetes Association's Education Recognition Program (ERP).

2001 Majority of ADEF Program sites in Maine are dually certified by the Maine DCP and the ADA-ERP. The Maine Medicaid Program has issued no changes in ADEF Program reimbursement coverage, nor have changes been made to P.L. 592.

2001 In November, the DCP issued a revised ADEF Program Manual that incorporates revisions in the 2000 *National Standards*, and significant changes in the presentation of the program content areas' learning objectives, content, teaching strategies/ resources.

2005 All ADEF/DSMT Program sites required to obtain American Diabetes Association Education Recognition Program status to assure quality standards.

2011 Ambulatory Diabetes Education and Follow-up (ADEF) title only is removed from the Diabetes Self-Management Training (DSMT) Program Manual to align with national reimbursement language and provide consistence with branding related to the type and delivery of education provided in the USA. ADEF will always be a term in Maine that is synonymous with DSMT.

How do Maine DSMT Program instructors apply for national-certification as a Certified Diabetes Educator (CDE)?

In 1985, the American Association of Diabetes Educators (AADE) established the National Certification Board for Diabetes Educators, Inc. for the sole purpose of developing and implementing a certification process for Diabetes Educators (C.D.E.).

The NCBDE certification process is a voluntary testing program used to assess the qualified health care professional's knowledge in diabetes education. It is an evaluative process that demonstrates that rigorous education, experience, and examination criteria have been met and provides recognition for knowledge in this specialty. The CDE credential demonstrates to patients and employers that the certified health care professional possesses distinct and specialized knowledge, thereby promoting quality of care for patients with diabetes.

For Eligibility Criteria for applying for certification, review NCBDE website at:

http://www.ncbde.org

Internet Websites: Diabetes-Related

American Association of Diabetes Educators – http://www.diabeteseducator.org/

American Association of Diabetes Educators – Maine – http://www.myaadenetwork.org/p/cm/ld/fid=5&req=view&gid=44&sid=832

American Diabetes Association – http://www.diabetes.org/

American Dietetic Association – http://www.eatright.org/

Canadian Diabetes Association – http://www.diabetes.ca/

Centers for Disease Control and Prevention – Division of Diabetes Translation – http://www.cdc.gov/diabetes/

Diabetes Care and Education Practice Group (DCE) – http://www.dce.org/

Indian Health Service Division of Diabetes Treatment and Prevention – http://www.ihs.gov/MedicalPrograms/Diabetes/

International Diabetes Center – www.parknicollet.com/Diabetes

Joslin Diabetes Center - http://www.joslin.org/

Juvenile Diabetes Foundation – http://www.jdrf.org/

Maine Diabetes Prevention and Control Program – http://www.maine.gov/dhhs/mecdc/population-health/dcp/index.htm

National Diabetes Education Program (NDEP) – http://ndep.nih.gov/

National Diabetes Information Clearinghouse (NDIC)-- http://diabetes.niddk.nih.gov

National Institute of Diabetes, Digestive, & Kidney Disease (NIDDK) – www.niddk.nih.gov

National Diabetes Prevention Program (NDPP) - http://www.cdc.gov/diabetes/prevention/

Journals: Diabetes-Related

American Association of Diabetes Educators:

- *The Diabetes Educator*

American Diabetes Association**:**

- *Clinical Diabetes*
- *Diabetes*
- *Diabetes Care*
- *Diabetes Forecast*
- *Diabetes Spectrum*
- *Diabetes, Obesity, CVD (Doc) News*

Indian Health Service:

- *Health for Native Life*

Juvenile Diabetes Research Foundation International:

- *Countdown*

Kings Publishing, Inc.:

- *Diabetes Health (formerly Diabetes Interview)*

National Federation of the Blind

- *Voice of the Diabetic*

R.A. Rapaport Publishing, Inc.

- *Diabetes Self-Management*
- *Practical Diabetology*

PREASSESSMENT INTERVIEW GUIDE

Instructor Considerations	Leading Questions and Comments Addressed to the Person with Diabetes
(1) INTRODUCTION:	
Instructor - introduces self - who you are, what you do.	Hello_____. My name is_____ and I am a _____.
Explain purpose of timing of interview.	I'll be conducting the upcoming diabetes education classes that you will be attending.
Clarify roles and responsibilities.	In order to find out what information you would like to learn, I would like to ask you some questions and get some background information. This will take about an hour. Is that OK? Please feel free to ask any questions that you might have during this time. The doctor, dietitian, and I will work with you to develop your plan of care, but you will be responsible for your diabetes management. How do you feel about that?
Elicit goals and expectations of the client.	Do you have any questions before we get started?
	How do you feel about coming today?
Tell client which of his or her goals might be met in the class.	What do you think you need to learn about your diabetes?

Instructor Considerations	Leading Questions and Comments Addressed to the Person with Diabetes

(2) RELEVANT MEDICAL HISTORY AND HEALTH STATUS

- Age
- Height and Weight
- BMI
- Onset and duration of diabetes
- Recent laboratory tests
- Last eye, dentist, foot exams
- Type & management of diabetes
- Diabetes medication
- Other medications
- Health care visits in past year
- Other medical conditions
- Physical limitations
- Vision, hearing, fine motor skills, mobility?
- Restrictions on activity
- Concerns or limitations?
- Immunizations
- Tobacco use
- Alcohol use
- Sexual activity
- Knowledge/use of contraception

Instructor Considerations	Leading Questions and Comments Addressed to the Person with Diabetes

(3) ATTITUDES AND HEALTH BELIEFS

From your discussion, assess what stage of adaptation the client is at:

What things in life are you looking forward to?

How do you feel about having diabetes?

Do you have concerns about your health?

<u>Stage 1 - Disbelief</u>

Do you know anyone who has or had diabetes?

"It can't be true. I don't have diabetes."

What was it like for them?

How do you think diabetes will affect your life?

How do you feel about/do you feel you can affect:

- Diabetes complications?
- Prevention of health problems?
- Health care team

What is your role in diabetes care?

- Concealing symptoms
- Seeking an authority who will dismiss the diagnosis
- Refusing help

<u>Stage 2 - Resistance</u>

"It won't get me down."

- Reluctant to accept help
- Initial recognition of patient in change-of-life orientation

Stage 3 - Affirmation

"I guess I have to face it."

- Grieving for loss of former self
- Publicly explaining about diabetes

Stage 4 - Integration

"I know it's there, but I don't think much about it."

- Living with it
- Spending time and energy on other matters
- Integration of lifestyle with new values

These stages should provide clues. Choose the response about the person's readiness to learn. A person at stage 1 or 2 may not be ready for the classes, while a person at stage 3 would be a prime candidate for the program.

Choose an answer to this question:
"Having diabetes is a . . .

_ Disaster
_ Burden
_ Problem
_ Challenge
_ Opportunity
_ Another response?

Tell me more about the reasons you chose this response to "Having diabetes is a…."

(4) SOCIAL SUPPORTS:

Ask open-ended questions to assess how the person interacts with his/her Family and friends concerning having diabetes

Tell me about your family.
Tell me about the peple in your household.

Tell me about the other important people in your life.
Tell me about your current helpers/how do they help.
Tell me about communication in your family

Any concerns about communication/support received?

Instructor Considerations	Leading Questions and Comments Addressed to the Person with Diabetes
	How has diabetes affected them (family and friends)?
	Who do you talk to about having diabetes?
	How do you feel about talking to others about diabetes?
	What would you like to tell others about having diabetes?
(5) LIFE STYLE:	
Ask open-ended questions to obtain information which provides clues to the person's life style.	Describe one of your typical days.
	Do weekdays differ from weekends? If so, how?
	Tell me about your work/school.
	What do you do for fun?
	What types of activities do you enjoy in your spare time?
	Name some adjectives that describe you.
	Do you eat meals away from home? How often? Is it difficult for you to eat meals away from home?
	Do you feel comfortable with your present weight?
	Have you ever been told to lose weight? By whom?
	Were you able to lose? Did you gain it back? What is the hardest part about losing weight? Would you like to lose weight? Do you have an exercise routine? Describe it. How do you feel about physical activity?

Instructor Considerations	Leading Questions and Comments Addressed to the Person with Diabetes
(6) LEARNING STYLE AND READINESS TO LEARN	How do you prefer to learn something new? • Demonstrations • Reading - What do you like to read? • By doing • Audiovisuals • Talking to other people • Other
Use a health literacy assessment to Document health literacy	Do you have access to a computer/Internet? Do you subscribe to any diabetes publications? Any barriers to learning? • Cognitive • Emotional • Stress • Reading level • Transportation • Prior experience with learning
(7) KNOWLEDGE/SKILLS/ BEHAVIORS RELATED TO DIABETES SELF CARE	
You might ask:	What do you know about your Diabetes/ self-care/care plan/care goals/targets? How confident are you that your current knowledge enables self-care?...that you can handle unexpected events? Have you had prior diabetes education? What sources of diabetes information do you use?

	Explore skills/behaviors for eating, physical activity, SBGM, medication, handling feelings/stress, problem solving

Instructor Considerations	Leading Questions and Comments Addressed to the Person with Diabetes
Use a knowledge/skills questionnaire and/or a knowledge/ skills checklist to document the level of knowledge and skills in the ten content areas.	For example: Show me how you test your blood sugar. Please select foods and amounts from this menu using your meal plan.
(8) CULTURAL INFLUENCES	
Ask open-ended questions to assess how culture may influence the participant's learning experience	Tell me about traditions you observe. Do you use a traditional healer? Describe any remedies you use to treat your diabetes or other health conditions. How do you feel about participating in diabetes education? How do you like to be treated by your health care provider? Describe any remedies you use to treat your diabetes or other health conditions Describe traditional foods eaten What language do you prefer to speak at home? How do you like to be treated by your health care provider?
(9) CLOSURE:	
Reminder of date, time, and location of first class. Encourage family members to attend.	What information about diabetes would you like most to learn in class?

What do they need to know about diabetes?

Instructor Considerations	Leading Questions and Comments Addressed to the Person with Diabetes
Summarize assessment interview.	From our discussion, it seems like you would most like to learn about _____, and _____.
List priority areas to work on as a basis for a care plan.	Your diabetes team including the doctor, dietitian, and nurse will work with you on these points during classes and office visits. Thanks for coming, and I will see you on (date and time of class).

Appendix

Prediabetes: Resources

Awareness Campaigns

Small Steps. Big Rewards. Prevent Type 2 Diabetes.
National Diabetes Education Program
www.ndep.nih.gov

Curricula

Lifestyle Change Program. Diabetes Prevention Program.
www.bsc.gwu.edu/dpp/lifestyle/dpp_part.html

Power to Prevent: A Family Lifestyle Approach to Diabetes Prevention
National Diabetes Education Program
www.ndep.nih.gov

Small Steps. Big Rewards. Your Game Plan to Prevent Type 2 Diabetes.
(Information for patients and health care provider tool kit.)
National Diabetes Education Program
www.ndep.nih.gov

Diabetes Prevention Program Materials

National Diabetes Prevention Program (NDPP)
http://www.cdc.gov/diabetes/prevention/

Diabetes Prevention Program
www.diabetes.niddk.nih.gov/dm/pubs/preventionprogram/DPP.pdf

Diabetes Prevention Program Research Group. NEJM. Feb 7, 2002, 346:393-403.

Lifestyle Change Program. Diabetes Prevention Program.
www.bsc.gwu.edu/dpp/lifestyle/dpp_part.html

Slide Set
www.bsc.gwu.edu/dpp/slides.htmlvdoc

Summary Fact Sheet
http://diabetes.niddk.nih.gov/dm/pubs/preventionprogram/index.htm

Fact Sheets

Prediabetes fact sheets available from:

American Diabetes Association
www.diabetes.org

Centers for Disease Control
www.cdc.gov

International Diabetes Center
www.parknicollet.com

National Diabetes Education Program
www.ndep.nih.gov

Guidelines

American Diabetes Associatioon Position Statement: The prevention and delay of type 2 diabetes. Diabetes Care. January 2004, Vol 27, Suppl1, S47-S54.

Diagnosis and Management of Prediabetes in the Continuum of Hyperglycemia—When Do the Risks of Diabetes Begin? ACE/AACE Consensus Statement. 2008.
www.aace.com/pub/pdf/guidelines/prediabetesconsensus.pdf

Guidelines for the Care of Adults with Prediabetes and/or the Metabolic Syndrome in Clinical Settings. Indian Health Service. 2008.
www.ihs.gov/MedicalPrograms/diabetes

Patient Education

National Diabetes Education Program
www.ndep.nih.gov

- Get Real! You Don't Have to Knock Yourself Out to Prevent Diabetes
- It's Never Too Late to Prevent Diabetes; A Lifetime of Small Steps for a Healthy Famly
- It's Not Too Late to Prevent Diabetes
- It's Never Too Early to Prevent Diabetes
- More Than 50 Ways to Prevent Diabetes
- Tips for Kids: How to Lower Your Risk for Type 2 Diabetes
- Tips for Teens: Lower Your Risk for Type 2 Diabetes
- We Have the Power to Prevent Diabetes

Pregnancy: Resources

Curricula

Beautiful Beginnings: Diabetes and Pregnancy. Indian Health Service Division of Diabetes Treatment and Prevention.
www.ihs.gov/MedicalPrograms/diabetes

Gestational Diabetes Basics Curriculum Guide. International Diabetes Center. www.parknicollet.com

Sweet Success Express. California Diabetes and Pregnancy Program.
www.sweetsuccessexpress.com

Organizations

American College of Obstetricians and Gynecologists
www.acog.org

American Diabetes Association
www.diabetes.org

American Dietetic Association
www.eatright.org

California Diabetes and Pregnancy Program
www.cdph.ca.gov

Indian Health Service
www.ihs.gov/MedicalPrograms/diabetes

International Diabetes Center
www.parknicollet.com

National Institute of Child Health and Human Development
www.nichd.nih.gov

Office on Women's Health
www.4women.gov

Women, Infants and Children Program (WIC). USDA
www.fns.usda.gov/wic

Appendix

Recognition of DSME Programs: Summary of Options

The Centers for Medicare and Medicaid Services (CMS) currently recognizes three organizations as approved National Accreditation Organizations (NAO) for diabetes self-management education (DSME) programs—the American Association of Diabetes Educators (AADE) since 2009, the American Diabetes Association (ADA) since 2001, and the Indian Health Service (IHS) since 2002. The NAOs determine whether DSME programs meet a set of quality standards and are eligible for third party reimbursement.
All three organizations:

- Base their accreditation programs on the 2007 *National Standards for Diabetes Self-Management Education* (*NSDSME*) (2012 to be release August 2012)
- Use a formal application process, including required application support documentation
- Require annual reporting by accredited programs
- Perform random audits of accredited programs to ensure compliance of accreditation criteria
- Have a 4-year renewal
- Provide tools and technical assistance to DSME programs

The three organizations vary in the terminology they use in their recognition programs, application and audit procedures, specific review criteria, administrative policies and procedures, and application fees. Further, the Indian Health Service is unique in that it only accredits DSME programs at IHS, tribal and urban Indian health facilities and requires no application fee. Accreditation information, including fees, application forms/instructions, and lists of accredited programs are available at each National Accreditation Organizations' website:

American Association of Diabetes Educators
Diabetes Education Accreditation Program (DEAP)
www.diabeteseducator.org

American Diabetes Association
Education Recognition Program (ERP)
www.diabetes.org

Indian Health Service
Integrated Diabetes Education Recognition Program (IDERP)
www.ihs.gov

Appendix

Sample Situations

The following *Sample Situations* provide ideas for problem-solving discussions and curriculum *Activities*. Using *Sample Situations* can help participants think about "what ifs" in the context of their own lives. The samples included here provide a basic outline of a situation. Educators are encouraged to expand on the situations as needed and make them appropriate for their local community and participants. Adding questions to the sample situations, such as "What would you do?" or "What steps would you take?" can help focus discussion.

Behavior Change

- Your A1C is 8%. You are checking your blood sugar two or three times a week, usually in the evening at home. Your diabetes care team talked with you about checking more often. You do not want to check more often. You do not want to check at work at all.
- Everyone seems to be on your case about lying around and watching a lot of television when you are home. They do not understand that you have a lot to do and think about, etc. When you are home you just want to rest.
- You take a lot of time getting ready for work in the morning. You frequently skip breakfast because you do not have time for it. You often do not feel well in the morning after you get to work.
- You know you need to get moving. Your diabetes care team wants you to get more physical activity and you know your blood sugar has been going up. You just cannot seem to think of anything you would like to do.

Blood Sugar Checks

- You and your diabetes care team decided it would be best for you to check your blood sugar in the morning before breakfast, before lunch at work, before dinner at home and at bedtime for the next two weeks. Two days have gone by and you have not been able to stick to this schedule. You are just too busy with other things.

Choices/Decisions

- You were diagnosed with type 2 diabetes three months ago. You have done well with following your diabetes care plan and your blood sugars have been at target goals for the last month. You are making your first visit with your sister since you learned you had diabetes. You have sort of been avoiding her because you know she will have sweets around and offer you some. She offers you a big piece of pie when you get to her house today.
- You have not told any of your co-workers that you have diabetes; you have a reaction at work that you manage to treat but co-workers note that you are acting funny and you feel ashamed and fearful of telling them what is going on.

Communication

Two-Way Talking:

- You have recently been diagnosed with diabetes and your wife is making all kinds of food for you in large portions and insisting that you eat it. Your blood sugars are high and out of range. You do not feel like you can make good food choices because of this. You don't know how to talk with her about this.
- Your wife is constantly harping at you – "you can't eat this and you shouldn't eat that" and as a result you get angry and start yelling What can you do to improve communication?

Active/Inactive Listening:

- You told a friend that you had diabetes and you asked her not to tell anyone. But she told two other people and now all of your acquaintances seem to know you have diabetes. You are very upset with her. She said you never told her not to tell anyone.

Difficult Experiences

- Your husband died unexpectedly three months ago. You are feeling very sad and depressed. You are having a hard time managing your diabetes..

Feelings and Stress

- You had a hard day at work and want to eat something to make you feel better.
- Your are having to work extra hours at work, you are responsible for all the household chores, cooking, cleaning, lawn work, etc, You are involved with volunteer groups two nights a week. You are finding you don't have time to manage your diabetes.

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Goals: Setting and Reaching

- You have just learned that physical activity can help you reach your target blood sugar goals and stay healthy. You do not like exercise and have not been physically active lately.

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Healthy Eating

- Your wife buys "special" food just for you. You know that the whole family needs to be eating better so that they can be healthy. You want to tell your wife about this.
- You know that it would be easier to take care of your diabetes if you lost weight. You just cannot seem to avoid the extra helpings at meals..
- A new fast food restaurant has opened in town. From the advertisements it looks like a really good one. You and your friends are going to check it out after work tomorrow.

High Blood Sugar

- You are staying at your brother's home this weekend. They always give you sweet rolls when you get there. They make your blood sugar go up into the 200s, but you would feel badly telling them you did not want them. Besides, they are really good.
- Your blood sugar has been in the 300s each time you checked it for the past two days, even though you have been doing a lot of physical activity to get it down. You feel fine.
- Your blood sugars are getting higher no matter what you do. You are feeling a lot of stress.

Hunger Situations

- You are shopping in the mall with your friends. You smell all the fast-food restaurants. You want to eat some fast food for lunch.
- You are at home eating with your family. You just ate a large meal and you are still hungry. You want to eat dessert.
- You see your friends eating chocolate bars. You want to eat one, too.
- You always feel hungry at 4PM on weekend days.

Low Blood Sugar

- Your blood sugar has been less than 70 mg/dl when you get home from work for the past week. You are trying to figure out what may be causing this.
- You just started a new diabetes medicine. You have been told it has a possible side effect of low blood sugar.
- You are driving your car. You are starting to feel sweaty and shaky. You did not bring a carbohydrate source with you.
- You are canoeing with your friends and start to feel shaky and tired. Your friends are yelling at you to "hurry up" but you cannot seem to do it.

Medicine

- You forgot to take your diabetes pills this morning. It is time to take your evening diabetes pills.
- When you check your blood sugar and it is high, you take your diabetes medicine. When you check your blood sugar and it is normal or low, you do not take your diabetes medicine.
- You are on a canoe trip with your family. You had put your diabetes medicine dose for three days in a plastic bag to keep it from getting wet. When the canoe flipped, the small plastic bag with your medicine in it floated away.

Physical Activity

- While jogging on the track you pull a leg muscle. You know that physical activity helps you stay at your target blood sugar goal and you do not want to stop jogging.

- You know walking is good for your diabetes but you hate to walk alone so you don't go.

Risk-Reduction Situations

- You have missed your last several diabetes care appointments due to other commitments and lack of transportation. You are not too worried about missing appointments because you are not on any medicine.
- You are a smoker and were recently diagnosed with diabetes. You want to stop but cannot seem to. It is costing you a lot of money to smoke, and you are scared about what it might be doing to your body.

Self-Care (General)

- You are tired of taking medicine, checking your blood sugar and going to the clinic. You do not want to do it anymore. You want to eat what everyone else does.
- You have flown out of town on a business trip. You discover that you have forgotten your diabetes medicine.

Sick Day Management

- You are home sick. You vomited once. Nothing tastes good to you. You do not even feel like drinking water. Since you are not eating you are going to skip your diabetes medicine.

Social Situations Influencing Eating Behavior

- There is a birthday celebration at a friend's house. Your friend offers birthday cake and regular soda to everyone.

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National Standards for Diabetes Self-Management Education and Support

LINDA HAAS, PHC, RN, CDE (CHAIR)[1]
MELINDA MARYNIUK, MED, RD, CDE (CHAIR)[2]
JONI BECK, PHARMD, CDE, BC-ADM[3]
CARLA E. COX, PHD, RD, CDE, CSSD[4]
PAULINA DUKER, MPH, RN, BC-ADM, CDE[5]
LAURA EDWARDS, RN, MPA[6]
EDWIN B. FISHER, PHD[7]
LENITA HANSON, MD, CDE, FACE, FACP[8]
DANIEL KENT, PHARMD, BS, CDE[9]
LESLIE KOLB, RN, BSN, MBA[10]
SUE MCLAUGHLIN, BS, RD, CDE, CPT[11]
ERIC ORZECK, MD, FACE, CDE[12]
JOHN D. PIETTE, PHD[13]
ANDREW S. RHINEHART, MD, FACP, CDE[14]
RUSSELL ROTHMAN, MD, MPP[15]
SARA SKLAROFF[16]
DONNA TOMKY, MSN, RN, C-NP, CDE, FAADE[17]
GRETCHEN YOUSSEF, MS, RD, CDE[18]
ON BEHALF OF THE 2012 STANDARDS REVISION TASK FORCE

By the most recent estimates, 18.8 million people in the U.S. have been diagnosed with diabetes and an additional 7 million are believed to be living with undiagnosed diabetes. At the same time, 79 million people are estimated to have blood glucose levels in the range of prediabetes or categories of increased risk for diabetes. Thus, more than 100 million Americans are at risk for developing the devastating complications of diabetes (1).

Diabetes self-management education (DSME) is a critical element of care for all people with diabetes and those at risk for developing the disease. It is necessary in order to prevent or delay the complications of diabetes (2–6) and has elements related to lifestyle changes that are also essential for individuals with prediabetes as part of efforts to prevent the disease (7,8).

The National Standards for Diabetes Self-Management Education are designed to define quality DSME and support and to assist diabetes educators in providing evidence-based education and self-management support. The Standards are applicable to educators in solo practice as well as those in large multicenter programs—and everyone in between. There are many good models for the provision of diabetes education and support. The Standards do not endorse any one approach, but rather seek to delineate the commonalities among effective and excellent self-management education strategies. These are the standards used in the field for recognition and accreditation. They also serve as a guide for nonaccredited and nonrecognized providers and programs.

Because of the dynamic nature of health care and diabetes-related research, the Standards are reviewed and revised approximately every 5 years by key stakeholders and experts within the diabetes education community. In the fall of 2011, a Task Force was jointly convened by the American Association of Diabetes Educators (AADE) and the American Diabetes Association (ADA). Members of the Task Force included experts from the areas of public health, underserved populations including rural primary care and other rural health services, individual practices, large urban specialty practices, and urban hospitals. They also included individuals with diabetes, diabetes researchers, certified diabetes educators, registered nurses, registered dietitians, physicians, pharmacists, and a psychologist. The Task Force was charged with reviewing the current National Standards for Diabetes Self-Management Education for their appropriateness, relevance, and scientific basis and updating them based on the available evidence and expert consensus.

The Task Force made the decision to change the name of the Standards from the National Standards for Diabetes Self-Management Education to the National Standards for Diabetes Self-Management Education and Support. This name change is intended to codify the significance of ongoing support for people with diabetes and those at risk for developing the disease, particularly to encourage behavior change, the maintenance of healthy diabetes-related behaviors, and to address psychosocial concerns. Given that self-management does not stop when a patient leaves the educator's office, self-management support must be an ongoing process.

Although the term "diabetes" is used predominantly, the Standards should also be understood to apply to the education and support of people with prediabetes. Currently, there are significant barriers to the provision of education and support to those with prediabetes. And yet, the strategies for supporting successful behavior change and the healthy behaviors recommended for people with prediabetes are largely identical to those for

From the [1]VA Puget Sound Health Care System Hospital and Specialty Medicine, Seattle, Washington; the [2]Joslin Diabetes Center, Boston, Massachusetts; [3]Pediatric Diabetes and Endocrinology, The University of Oklahoma Health Sciences Center College of Medicine, Edmond, Oklahoma; the [4]Western Montana Clinic, Missoula, Montana; the [5]Diabetes Education/Clinical Programs, American Diabetes Association, Alexandria, Virginia; the [6]Center for Healthy North Carolina, Apex, North Carolina; [7]Peers for Progress, American Academy of Family Physicians Foundation and Department of Health Behavior, Gillings School of Global Public Health, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina; [8]Ultracare Endocrine and Diabetes Consultants, Venice, Florida; the [9]Group Health Central Specialty Clinic, Seattle, Washington; the [10]Diabetes Education Accreditation Program, American Association of Diabetes Educators, Chicago, Illinois; [11]On Site Health and Wellness, LLC, Omaha, Nebraska; [12]Endocrinology Associates, Main Medical Plaza, Houston, Texas; the [13]VA Center for Clinical Management Research and the University of Michigan Health System, Ann Arbor, Michigan; [14]Johnston Memorial Diabetes Care Center, Abingdon, Virginia; the [15]Center for Health Services Research, Vanderbilt University Medical Center, Nashville, Tennessee; [16]Technical Writer, Washington, DC; the [17]Department of Endocrinology and Diabetes, ABQ Health Partners, Albuquerque, New Mexico; and [18]MedStar Diabetes Institute/MedStar Health, Washington, DC.
Corresponding authors: Linda Haas, linda.haas@va.gov, and Melinda Maryniuk, melinda.maryniuk@joslin.harvard.edu.
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individuals with diabetes. As barriers to care are overcome, providers of DSME and diabetes self-management support (DSMS), given their training and experience, are particularly well equipped to assist individuals with prediabetes in developing and maintaining behaviors that can prevent or delay the onset of diabetes.

Many people with diabetes have or are at risk for developing comorbidities, including both diabetes-related complications and conditions (e.g., heart disease, lipid abnormalities, nerve damage, hypertension, and depression) and other medical problems that may interfere with self-care (e.g., emphysema, arthritis, and alcoholism). In addition, the diagnosis, progression, and daily work of managing the disease can take a major emotional toll on people with diabetes that makes self-care even more difficult (9). The Standards encourage providers of DSME and DSMS to address the entire panorama of each participant's clinical profile. Regular communication among the members of participant's health care teams is essential to ensure high-quality, effective education and support for people with diabetes and prediabetes.

In the course of its work on the Standards, the Task Force identified areas in which there is currently an insufficient amount of research. In particular, there are three areas in which the Task Force recommends additional research:

1. What is the influence of organizational structure on the effectiveness of the provision of DSME and DSMS?
2. What is the impact of using a structured curriculum in DSME?
3. What training should be required for those community, lay, or peer workers without training in health or diabetes who are to participate in the provision of DSME and to provide DSMS?

Finally, the Standards emphasize that the person with diabetes is at the center of the entire diabetes education and support process. It is the individuals with diabetes who do the hard work of managing their condition, day in and day out. The educator's role, first and foremost, is to make that work easier (10).

DEFINITIONS

DSME: The ongoing process of facilitating the knowledge, skill, and ability necessary for prediabetes and 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 standards. 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.

DSMS: Activities that assist the person with prediabetes or diabetes in implementing and sustaining the behaviors needed to manage his or her condition on an ongoing basis beyond or outside of formal self-management training. The type of support provided can be behavioral, educational, psychosocial, or clinical (11–15).

STANDARD 1

Internal structure

The provider(s) of DSME will document an organizational structure, mission statement, and goals. For those providers working within a larger organization, that organization will recognize and support quality DSME as an integral component of diabetes care.

Documentation of an organizational structure, mission statement, and goals can lead to efficient and effective provision of DSME and DSMS. In the business literature, case studies and case report investigations of successful management strategies emphasize the importance of clear goals and objectives, defined relationships and roles, and managerial support. Business and health policy experts and organizations emphasize written commitments, policies, support, and the importance of outcomes reporting to maintain ongoing support or commitment (16,17).

Documentation of an organizational structure that delineates channels of communication and represents institutional commitment to the educational entity is critical for success. According to The Joint Commission, this type of documentation is equally important for both small and large health care organizations (18). 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 from which to deliver quality diabetes education. In 2010, The Joint Commission published the *Disease-Specific Care Certification Manual*, which outlines standards and performance measurements for chronic care programs and disease management services, including "Supporting Self-Management" (18).

STANDARD 2

External input

The provider(s) of DSME will seek ongoing input from external stakeholders and experts in order to promote program quality.

For both individual and group providers of DSME and DSMS, external input is vital to maintaining an up-to-date, effective program. Broad participation of community stakeholders, including individuals with diabetes, health professionals, and community interest groups, will increase the program's knowledge of the local population and allow the provider to better serve the community. Often, but not always, this external input is best achieved by the establishment of a formal advisory board. The DSME and DSMS provider(s) must have a documented plan for seeking outside input and acting on it.

The goal of external input and discussion in the program planning process is to foster ideas that will enhance the quality of the DSME and/or DSMS being provided, while building bridges to key stakeholders (19). The result is effective, dynamic DSME that is patient centered, more responsive to consumer-identified needs and the needs of the community, more culturally relevant, and more appealing to consumers (17,19,20).

STANDARD 3

Access

The provider(s) of DSME will determine who to serve, how best to deliver diabetes education to that population, and what resources can provide ongoing support for that population.

Currently, the majority of people with diabetes and prediabetes do not receive any structured diabetes education (19,20). While there are many barriers to DSME, one crucial issue is access (21). Providers of DSME can help address this issue by:

- Clarifying the specific population to be served. Understanding the community, service area, or regional demographics is crucial to ensuring that as many people as possible are being reached, including those who do not frequently attend clinical appointments (9,17,22–24).
- Determining that population's self-management education and support

needs. Different individuals, their families, and communities need different types of education and support (25). The provider(s) of DSME and DSMS needs to work to ensure that the necessary education alternatives are available (25–27). This means understanding the population's demographic characteristics, such as ethnic/cultural background, sex, and age, as well as levels of formal education, literacy, and numeracy (28–31). It may also entail identifying resources outside of the provider's practice that can assist in the ongoing support of the participant.

- Identifying access issues and working to overcome them. It is essential to determine factors that prevent individuals with diabetes from receiving self-management education and support. The assessment process includes the identification of these barriers to access (32–34). These barriers may include the socioeconomic or cultural factors mentioned above, as well as, for example, health insurance shortfalls and the lack of encouragement from other health providers to seek diabetes education (35,36).

STANDARD 4

Program coordination

A coordinator will be designated to oversee the DSME program. The coordinator will have oversight responsibility for the planning, implementation, and evaluation of education services.

Coordination is essential to ensure that quality diabetes self-management education and support is delivered through an organized, systematic process (37,38). As the field of DSME continues to evolve, the coordinator plays a pivotal role in ensuring accountability and continuity in the education program (39–41). The coordinator's role may be viewed as that of coordinating the program (or education process) and/or as supporting the coordination of the many aspects of self-management in the continuum of diabetes and related conditions when feasible (42–49). This oversight includes designing an education program or service that helps the participant access needed resources and assists him or her in navigating the health care system (37,50–55).

The individual serving as the coordinator will have knowledge of the lifelong process of managing a chronic disease and facilitating behavior change, in addition to experience with program and/or clinical management (56–59). In some cases, particularly in solo or other small practices, the coordinator may also provide DSME and/or DSMS.

STANDARD 5

Instructional staff

One or more instructors will provide DSME and, when applicable, DSMS. At least one of the instructors responsible for designing and planning DSME and DSMS will be a registered nurse, registered dietitian, or pharmacist with training and experience pertinent to DSME, or another professional with certification in diabetes care and education, such as a CDE or BC-ADM. Other health workers can contribute to DSME and provide DSMS with appropriate training in diabetes and with supervision and support.

Historically, nurses and dietitians were the main providers of diabetes education (3,4,60–64). In recent years, the role of the diabetes educator has expanded to other disciplines, particularly pharmacists (65–67). Reviews comparing the effectiveness of different disciplines for education have not identified clear differences in the quality of services delivered by different professionals (3–5). However, the literature favors the registered nurse, registered dietitian, and pharmacist serving both as the key primary instructors for diabetes education and as members of the multidisciplinary team responsible for designing the curriculum and assisting in the delivery of DSME (1–7,68). Expert consensus supports the need for specialized diabetes and educational training beyond academic preparation for the primary instructors on the diabetes team (69–72). Professionals serving as instructors must document appropriate continuing education or comparable activities to ensure their continuing competence to serve in their instructional, training, and oversight roles (73).

Reflecting the evolving health care environment, a number of studies have endorsed a multidisciplinary team approach to diabetes care, education, and support. The disciplines that may be involved include, but are not limited to, physicians, psychologists and other mental health specialists, physical activity specialists (including physical therapists, occupational therapists, and exercise physiologists), optometrists, and podiatrists (68,74,75). More recently, health educators (e.g., Certified Health Education Specialists and Certified Medical Assistants), case managers, lay health and community workers (76–83), and peer counselors or educators (84,85) have been shown to contribute effectively as part of the DSME team and in providing DSMS. While DSME and DSMS are often provided within the framework of a collaborative and integrated team approach, it is crucial that the individual with diabetes is viewed as central to the team and that he or she takes an active role.

Certification as a diabetes educator (CDE) by the National Certification Board for Diabetes Educators (NCBDE) is one way a health professional can demonstrate mastery of a specific body of knowledge, and this certification has become an accepted credential in the diabetes community (86). An additional credential that indicates specialized training beyond basic preparation is board certification in Advanced Diabetes Management (BC-ADM) offered by the AADE, which is available for nurses, dietitians, pharmacists, physicians, and physician assistants (68,74,87).

Individuals who serve as lay health and community workers and peer counselors or educators may contribute to the provision of DSME instruction and provide DSMS if they have received training in diabetes management, the teaching of self-management skills, group facilitation, and emotional support. For these individuals, a system must be in place that ensures supervision of the services they provide by a diabetes educator or other health care professional and professional back-up to address clinical problems or questions beyond their training (88–90).

For services outside the expertise of any provider(s) of DSME and DSMS, a mechanism must be in place to ensure that the individual with diabetes is connected with appropriately trained and credentialed providers.

STANDARD 6

Curriculum

A written curriculum reflecting current evidence and practice guidelines, with criteria for evaluating outcomes, will serve as the framework for the provision of DSME. The needs of the individual participant will determine which parts of the curriculum will be provided to that individual.

Individuals with prediabetes and diabetes and their families and caregivers have much to learn to become effective self-managers of their condition. DSME

can provide this education via an up-to-date, evidence-based, and flexible curriculum (8,91).

The curriculum is a coordinated set of courses and educational experiences. It also specifies learning outcomes and effective teaching strategies (92,93). The curriculum must be dynamic and reflect current evidence and practice guidelines (93–97). Recent education research endorses the inclusion of practical problem-solving approaches, collaborative care, psychosocial issues, behavior change, and strategies to sustain self-management efforts (12,13,19,74,86,98–101).

The following core topics are commonly part of the curriculum taught in comprehensive programs that have demonstrated successful outcomes (2,3,5,91,102–104):

- Describing the diabetes disease process and treatment options
- Incorporating nutritional management into lifestyle
- Incorporating physical activity into lifestyle
- Using medication(s) safely and for maximum therapeutic effectiveness
- Monitoring blood glucose and other parameters and interpreting and using the results for self-management decision making
- Preventing, detecting, and treating acute complications
- Preventing, detecting, and treating chronic complications
- Developing personal strategies to address psychosocial issues and concerns
- Developing personal strategies to promote health and behavior change

While the content areas listed above provide a solid outline for a diabetes education and support curriculum, it is crucial that the content be tailored to match each individual's needs and be adapted as necessary for age, type of diabetes (including prediabetes and diabetes in pregnancy), cultural factors, health literacy and numeracy, and comorbidities (14,105–108). The content areas will be able to be adapted for all practice settings.

Approaches to education that are interactive and patient centered have been shown to be effective (12,13,109–112). Also crucial is the development of action-oriented behavioral goals and objectives (12–14,113). Creative, patient-centered, experience-based delivery methods—beyond the mere acquisition of knowledge—are effective for supporting informed decision making and meaningful behavior change and addressing psychosocial concerns (114,115).

STANDARD 7

Individualization

The diabetes self-management, education, and support needs of each participant will be assessed by one or more instructors. The participant and instructor(s) will then together develop an individualized education and support plan focused on behavior change.

Research has demonstrated the importance of individualizing diabetes education to each participant's needs (116). The assessment process is used to identify what those needs are and to facilitate the selection of appropriate educational and behavioral interventions and self-management support strategies, guided by evidence (2,63,116–118). The assessment must garner information about the individual's medical history, age, cultural influences, health beliefs and attitudes, diabetes knowledge, diabetes self-management skills and behaviors, emotional response to diabetes, readiness to learn, literacy level (including health literacy and numeracy), physical limitations, family support, and financial status (11,106,108,117,119–128).

The education and support plan that the participant and instructor(s) develop will be rooted in evidence-based approaches to effective health communication and education while taking into consideration participant barriers, abilities, and expectations. The instructor will use clear health communication principles, avoiding jargon, making information culturally relevant, using language- and literacy-appropriate education materials, and using interpreter services when indicated (107,129–131). Evidence-based communication strategies such as collaborative goal setting, motivational interviewing, cognitive behavior change strategies, problem solving, self-efficacy enhancement, and relapse prevention strategies are also effective (101,132–134). Periodic reassessment can determine whether there is need for additional or different interventions and future reassessment (6,72,134–137). A variety of assessment modalities, including telephone follow-up and other information technologies (e.g., Web based, text messaging, or automated phone calls), may augment face-to-face assessments (72,87,138–141).

The assessment and education plan, intervention, and outcomes will be documented in the education/health record. Documentation of participant encounters will guide the education process, provide evidence of communication among instructional staff and other members of the participant's health care team, prevent duplication of services, and demonstrate adherence to guidelines (117,135,142,143). Providing information to other members of the participant's health care team through documentation of educational objectives and personal behavioral goals increases the likelihood that all the members will work in collaboration (86,143). Evidence suggests that the development of standardized procedures for documentation, training 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 (135,143–145).

STANDARD 8

Ongoing support

The participant and instructor(s) will together develop a personalized follow-up plan for ongoing self-management support. The participant's outcomes and goals and the plan for ongoing self-management support will be communicated to other members of the health care team.

While DSME is necessary and effective, it does not in itself guarantee a lifetime of effective diabetes self-care (113). Initial improvements in participants' metabolic and other outcomes have been found to diminish after approximately 6 months (3). To sustain the level of self-management needed to effectively manage prediabetes and diabetes over the long term, most participants need ongoing DSMS (15).

The type of support provided can be behavioral, educational, psychosocial, or clinical (11–14). A variety of strategies are available for providing DSMS both within and outside the DSME organization. Some patients benefit from working with a nurse case manager (6,86,146). Case management for DSMS can include reminders about needed follow-up care and tests, medication management, education, behavioral goal setting, psychosocial support, and connection to community resources.

The effectiveness of providing DSMS through disease management programs, trained peers and community health workers, community-based programs, information technology, ongoing education, support groups, and medical nutrition

therapy has also been established (7–11,86,88–90,142,147–150).

While the primary responsibility for diabetes education belongs to the provider(s) of DSME, participants benefit by receiving reinforcement of content and behavioral goals from their entire health care team (135). Additionally, many patients receive DSMS through their primary care provider. Thus, communication among the team regarding the patient's educational outcomes, goals, and DSMS plan is essential to ensure that people with diabetes receive support that meets their needs and is reinforced and consistent among the health care team members.

Because self-management takes place in participants' daily lives and not in clinical or educational settings, patients will be assisted to formulate a plan to find community-based resources that may support their ongoing diabetes self-management. Ideally, DSME and DSMS providers will work with participants to identify such services and, when possible, track those that have been effective with patients, while communicating with providers of community-based resources in order to better integrate them into patients' overall care and ongoing support.

STANDARD 9

Patient progress

The provider(s) of DSME and DSMS will monitor whether participants are achieving their personal diabetes self-management goals and other outcome(s) as a way to evaluate the effectiveness of the educational intervention(s), using appropriate measurement techniques.

Effective diabetes self-management can be a significant contributor to long-term, positive health outcomes. The provider(s) of DSME and DSMS will assess each participant's personal self-management goals and his or her progress toward those goals (151,152).

The AADE Outcome Standards for Diabetes Education specify behavior change as the key outcome and provide a useful framework for assessment and documentation. The AADE7 lists seven essential factors: physical activity, healthy eating, taking medication, monitoring blood glucose, diabetes self-care–related problem solving, reducing risks of acute and chronic complications, and psychosocial aspects of living with diabetes (93,153,154). Differences in behaviors, health beliefs, and culture as well as their emotional response to diabetes can have a significant impact on how participants understand their illness and engage in self-management. DSME providers who account for these differences when collaborating with participants on the design of personalized DSME or DSMS programs can improve participant outcomes (147,148).

Assessments of participant outcomes must occur at appropriate intervals. The interval depends on the nature of the outcome itself and the time frame specified based on the participant's personal goals. For some areas, the indicators, measures, and time frames will be based on guidelines from professional organizations or government agencies.

STANDARD 10

Quality improvement

The provider(s) of DSME will measure the effectiveness of the education and support and look for ways to improve any identified gaps in services or service quality using a systematic review of process and outcome data.

Diabetes education must be responsive to advances in knowledge, treatment strategies, education strategies, and psychosocial interventions, as well as consumer trends and the changing health care environment. By measuring and monitoring both process and outcome data on an ongoing basis, providers of DSME can identify areas of improvement and make adjustments in participant engagement strategies and program offerings accordingly.

The Institute for Healthcare Improvement suggests three fundamental questions that should be answered by an improvement process (149):

- What are we trying to accomplish?
- How will we know a change is an improvement?
- What changes can we make that will result in an improvement?

Once areas for improvement are identified, the DSME provider must designate timelines and important milestones including data collection, analysis, and presentation of results (150). Measuring both processes and outcomes helps to ensure that change is successful without causing additional problems in the system. Outcome measures indicate the result of a process (i.e., whether changes are actually leading to improvement), while process measures provide information about what caused those results (144,150). Process measures are often targeted to those processes that typically impact the most important outcomes.

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The Scope of Practice, Standards of Practice, and Standards of Professional Performance for Diabetes Educators

Introduction

The Scope of Practice, Standards of Practice, and Standards of Professional Performance for Diabetes Educators has been developed by the AADE to define the scope, role, and minimal level of quality performance of the diabetes educator; to differentiate diabetes education as a distinct healthcare specialty; to promote diabetes self-management education and training (DSME/T) as an integral part of diabetes care; and to facilitate excellence. Representing the expertise and experience of a multidisciplinary task force of health professionals representative of the AADE membership and an extensive review process embracing a broad spectrum of practice areas, this document supports the specialty by:

- Stimulating the process of peer review,
- Promoting documentation of the outcomes of DSME/T,
- Encouraging research to validate practice and improve quality DSME/T and diabetes care,
- Engaging in a process of critical examination of current diabetes educator practice and professional performance, and
- Complementing other practice-related documents that address the delivery of DSME/T by diabetes educators and roles of other healthcare practitioners who are members of the diabetes care team.

Diabetes education is unique in that its practitioners come from a variety of health disciplines. Diabetes educators remain individually accountable to the standards set by the discipline and by national, state, local, and institutional regulations that define and guide professional practice. This document serves to guide diabetes educators' practice regardless of their professional discipline.

Background

Living well with diabetes requires active, diligent, effective self-management of the disease.[1] Self-management is an important concept to emphasize because persons with diabetes make choices and act on choices that affect their health on a regular and recurring basis. Similarly, people with pre-diabetes must be engaged in recognizing and addressing individual risk factors and acting on choices that affect their health. Effective self-management is a process that includes learning the body of

knowledge relevant to the disease state, defining personal goals, weighing the benefits and risks of various treatment options, making informed choices about treatment, developing skills (both physical and behavioral) to support those choices, and evaluating the efficacy of the plan toward reaching self-defined goals.

DSME/T is impacted by the rising number of cases of pre-diabetes, metabolic syndrome, and diabetes in the United States; the possibilities of preventing and delaying the onset of type 2 diabetes; and the value of early and aggressive diabetes management.

The Diabetes Epidemic

Today, 23.6 million people in the United States have diabetes—17.9 million diagnosed cases; in addition there are an estimated 5.7 million undiagnosed cases.[1] The number of persons with diabetes represents 7.8% of the total US population and 10.7% of the population older than 20 years. Most people with diabetes (90%-95%) have type 2 diabetes.[2-3] Worldwide, the number of people with diabetes is expected to increase by 35% by the year 2025.[2]

The CDC estimates that 57 million American adults meet the diagnostic criteria for pre-diabetes.[1] Pre-diabetes increases the risk for developing diabetes and is an independent risk factor for cardiovascular disease.[3-6] Despite improvements in diabetes treatment, a recent report concluded that the proportion of adults in the United States with diagnosed type 2 diabetes that is controlled is inadequate and less favorable today than in previous years.[7,8] Diabetes remains the leading cause of new blindness, renal failure, and nontraumatic amputations in the United States. Hypertension, dyslipidemia, and obesity are highly associated with diabetes and pre-diabetes, as are other cardiovascular, cerebrovascular, and peripheral vascular diseases.[1,9] The annual economic burden of diabetes was estimated at more than $174 billion (direct and indirect costs) in 2007.[1,9]

Diabetes Prevention

There are no proven methods to prevent or delay type 1 diabetes, although studies are underway and more are planned. There is, however, evidence suggesting that type 2 diabetes can be prevented or delayed. The Diabetes Prevention Program showed a 58% relative reduction in the progression from pre-diabetes to diabetes in the lifestyle group (which received intensive nutrition and exercise counseling) as well as a 31% relative reduction in the group treated with metformin.[10,11] A Finnish study likewise demonstrated a 58% relative reduction in progression to diabetes in intervention group subjects; these subjects were encouraged to lose weight, reduce dietary fat and saturated fat intake, increase fiber intake, and participate in regular exercise.[12] Additional research examining the impact of lifestyle intervention in the area of diabetes and obesity will continue to inform practice.

Identifying people at risk for diabetes is the critical first step in preventing the disease.[13] The term pre-diabetes was adopted in 2002 to describe impaired glucose tolerance or impaired fasting glucose, to

promote awareness of the importance of pre-diabetes screenings, and to spread the encouraging news that diabetes may be preventable.[14]

Physical and behavioral characteristics used to identify persons at risk for diabetes and pre-diabetes include obesity, sedentary lifestyle, history of hypertension, dyslipidemia, family history of diabetes, gestational history, and ethnicity. These risk factors may be assessed by various means, many of which align with DMSE/T.[4,14.15] Formal diagnosis of pre-diabetes or diabetes (in the absence of overt diabetes symptoms and elevated blood glucose levels) is made with a fasting plasma glucose test, oral glucose tolerance test or A1C.[3]

Effective, safe, and low-cost interventions for preventing diabetes include changing nutrition and physical activity behaviors.[16] Medications are also effective, and while not without risk, side effects are minimal. Use of a single agent for prevention may negate the need for multiple agents to treat overt diabetes and reduce future costs associated with diabetes complications. While prevention strategies are not without cost or resources, they are proven to be worthwhile.[11]

Diabetes Educators

Diabetes educators are healthcare professionals who have experience in the care of people with diabetes and have achieved a core body of knowledge and skills in the biological and social sciences, communication, counseling, and education. Mastery of the knowledge and skills to become a diabetes educator is obtained through formal, practical and continuing education, individual study, and mentorship. The role of the diabetes educator can be assumed by professionals from a variety of health disciplines, including, but not limited to, registered nurses, registered dietitians, registered pharmacists, physicians, mental health professionals, podiatrists, optometrists, and exercise physiologists.[16]

The diabetes educator is an integral partner in the diabetes care team.[16,17] The diabetes educator understands the impact of acute or chronic problems on a person's health behaviors and lifestyle and on the teaching/learning process.[16,18] Such appreciation is essential for the development of a comprehensive plan for continuing education and cost effective, self-care management.

All diabetes educators, no matter their discipline, provide all aspects of DSME/T. It is recognized that members of the various healthcare disciplines who practice diabetes education bring their particular focus to the educational process. This widens or narrows the scope of practice for individual educators as is appropriate within the boundaries of each health profession, which may be regulated by national or state agencies or accrediting bodies. Regardless of discipline, the diabetes educator must be prepared to provide clients with the knowledge and skills to effectively manage their diabetes. Diabetes educators must possess a body of knowledge that spans across disciplines to provide comprehensive DSME/T.

Multi-level Diabetes Education Team

The multi-level diabetes education team approach recognizes the key role of the advanced level educator as well as the importance and contributions of lay health and community workers who are uniquely positioned to collaborate with diabetes educators and other healthcare providers to improve the quality of diabetes care in communities.[17-20] Given the diversity of DSME/T providers and skill levels, it is necessary to delineate levels of practice for the delivery of DSME/T. The diabetes education team can be characterized by five distinct levels of care that are differentiated by educational preparation, credentialing, professional practice regulations, and the clinical practice environment, as follows:

- Level 1, non-healthcare professional,
- Level 2, healthcare professional non-diabetes educator,
- Level 3, non-credentialed diabetes educator,
- Level 4, credentialed diabetes educator, and
- Level 5, advanced level diabetes educator/clinical manager.

Within this context, the American Association of Diabetes Educators (AADE) supports the role of diabetes community health workers (CHWs) as integral to the healthcare team; the practice of the CHW is outside the scope of this document. Please see the AADE position statement and related white paper for more information. [20,21]

All diabetes educators are encouraged to work toward formal certification. Level 4 and 5 diabetes educators are healthcare professionals who choose to specialize in diabetes care and meet the requirements to become a certified diabetes educator (CDE®) or board certified in advanced diabetes management (BC-ADM), respectively. These classifications are differentiated by educational preparation, formal credentialing, professional practice regulations, and the clinical practice environment. (Appendix 1) Certification as a CDE® or BC-ADM does not supersede the scope of practice that is outlined by the individual professional license. Attention must be given to the scope of practice of each professional as to assignment of skills, duties, and policies of each setting.

Other Roles for Diabetes Educators

Diabetes educators may also assume responsibilities beyond providing DSME/T to individuals. Program management; case management; clinical management; healthcare consultancy with other providers, organizations, industry; public and professional education; public health and wellness promotion; and research in diabetes management and education are all important roles assumed by diabetes educators.

Diabetes Self-Management Education/Training (DSME/T)

DSME/T is the formal process through which persons with or at risk for diabetes develop and use the knowledge and skill required to reach their self-defined diabetes goals. [22,23] Diabetes self-management is also appropriate for individuals with pre-diabetes. The terms diabetes self-management education (DSME) and diabetes self-management training (DSMT) are often used interchangeably; the later term,

however applies to the service that is covered and reimbursed by the Centers for Medicare and Medicaid Services. Diabetes educators provide more than training—they provide education. Because CMS and some other payers reimburse only for "training" and are unwilling to pay for "education," AADE embraces both terms to reflect the accuracy of what is provided to the patient along with the pragmatism required by payer coverage and reimbursement policies.

The scope and standards outlined in this document are meant to guide the individual diabetes educator's practice. Conversely, *The National Standards for Diabetes Self-Management Education* (NSDSME), which might be considered a companion to this document, is chiefly concerned with the structure, processes, and outcomes of diabetes education programs.[24] DSME/T is frequently provided within the context of accredited diabetes education programs that meet specific quality criteria and are eligible for reimbursement by Medicare and other third party payors.

DSME/T:

- Is guided by the best available science-based evidence.
- Incorporates the needs, goals, and life experiences of the person with or at risk of diabetes.
- Supports other healthcare providers through a continuum of interventions, ranging from knowledge and skills to supporting behavior change and clinical co-management.
- Optimizes the health of people with diabetes, thereby allowing them to lead more productive lives at work, home, and in the community.
- Recognizes the importance of cost-effective diabetes prevention and management as a way to maximize healthcare resources.
- Provides value for every dollar invested.

DSME/T is defined as an interactive, collaborative, ongoing process involving the person with diabetes and the educator(s).[23,24] The process includes the following:

- Assessing of the individual's specific education needs
- Goal setting to identify the individual's specific diabetes self-management goals
- Planning
- Implementing the education and behavioral intervention directed toward helping the individual achieve identified self-management goals, and
- Evaluating/monitoring the individual's attainment of identified self-management goals and clinical outcomes.[19]

DSME/T will vary according to the needs of the person with or at risk for diabetes, the educator's practice setting, and the local environment. Acute and ambulatory settings, community-based facilities, and pharmacy settings as well as electronic media can be used effectively for both individual and group education. Group education is a teaching method in which two or more individuals with a common disease state or medical diagnosis participate in activities facilitated by educators and/or healthcare providers. Regardless of the setting, DSME/T should be an accessible, planned, individualized, documented, and evaluated activity.[24,25]

The AADE7™ Self-Care Behaviors[25]

- Healthy eating
- Being active
- Monitoring
- Taking medications
- Problem solving
- Healthy coping
- Reducing risks

The DSME/T curriculum focuses on self-care behaviors and behavior change, both of which are necessary for effective self-management of the diabetes.[24] The AADE7™ Self-Care Behavior construct outlines the seven behaviors that are essential elements of DSME/T.[25] Diabetes self-management support (DSMS), which is provided by diabetes educators, is an essential adjunct to DSME/T. [24,26]

The primary goal of diabetes education is to provide knowledge and skill training that help individuals identify barriers and to facilitate problem-solving and coping skills to achieve effective self-care behavior and behavior change.[26,27] Measurement of DSME/T outcomes includes behavioral, clinical, utilization and quality metrics; the NSDSME require both continuous quality improvement and outcomes measurement.[24,28-30] This measurement should be conducted for individuals and in the aggregate, at least twice: 1) pre-intervention; and 2) post-intervention; additional follow-up measurements are ideal and should be applied as appropriate to the practice setting. [24,27-30] By collecting, tracking and assessing data on behaviors and clinical indicators, educators are able to determine their effectiveness with individuals and populations, compare their performance with established benchmarks, and measure and quantify the unique contribution that DSME/T plays in the overall context of diabetes care.[30]

The Standards of Practice for Diabetes Educators

The standards of practice for diabetes educators are guidelines for healthcare professionals and others involved in health care for persons with or at risk for diabetes. These Standards describe the level of competency set for the practice of diabetes education. The standards of practice for diabetes educators are defined in Table 1.

From these standards, a diabetes educator gains:

- A framework for professional practice,
- Guidelines with which to assess the quality of their practice, and
- Direction for improving practice.

Persons with or at risk for diabetes gain:

- A basis for forming expectations of the DSME/T experience and
- A means to assess the quality of DSME/T services provided.

Healthcare professionals who do not specialize in diabetes management gain:

- Information about the role of the diabetes educator,
- An appreciation of the importance of DSME/T as an integral component of the clinical care of the person with or at risk for diabetes, and
- A way to assess the quality of DSME/T services provided.

Insurers, policy makers, purchasers, employers, government agencies, industry, and the general public gain:

- A description of the specialized services provided by diabetes educators,
- An understanding of the importance of DSMT to improve quality of life and healthcare outcomes for persons with or at risk for diabetes, and
- A description of how processes and outcomes of DSMT are systematically collected and evaluated.

Additional publications that further define guidelines for specific levels of educators and disciplines can be found in the following publications:

- "Guidelines for the Practice of Diabetes Education"[19]
- "Scope and Standards for Diabetes Education by Nurses"[31]
- "ADA Standards of Practice and Standards of Professional Performance for Registered Dietitians in Diabetes Care" [22,32]
- "Scope and Standards for the Practice of Diabetes Education by Pharmacists"[33]

Table 1: Standards of Practice for Diabetes Educators

Standard 1: Assessment	The diabetes educator conducts a thorough, individualized assessment of the person with or at risk for diabetes. The assessment process requires ongoing collection and interpretation of relevant data

Measurement Criteria	The diabetes educator: • collects assessment data in a systematic and organized fashion from the person with diabetes and, as appropriate, from family members, significant others, members of the client's social support network, existing medical records, and referring healthcare providers. • addresses the following topics in the assessment: o health and medical history o nutrition history and practices o physical activity and exercise behaviors o prescription and over-the-counter medications o complementary and alternative therapies and practices o factors that influence learning such as education and health literacy levels, perceived learning needs, motivation to learn, readiness and health beliefs o diabetes self-management behaviors, including experience with self-adjusting the treatment plan o previous DSME/T, actual knowledge, and skills o physical factors including age, mobility, visual acuity, hearing, manual dexterity, alertness, attention span, and ability to concentrate or special needs or limitations, requiring accommodations or adaptive support, and use of alternative skills o psychosocial concerns, factors, or issues including family and significant other and social supports o current mental health status o history of substance use including alcohol, tobacco, and recreational drugs o occupation, vocation, education level, financial status, and social, cultural, and religious practices o access to and use of healthcare resources
	• addresses the following topics when assessing persons with pre-diabetes: o knowledge of pre-diabetes and risks associated with pre-diabetes o understanding of the role of weight loss and weight management through nutrition modification and healthy eating in the management of pre-diabetes o habits and behaviors associated with physical activity and understanding of the role of physical activity in management of pre-diabetes o motivation for maintaining positive behavioral change.
Standard 2: Goal Setting	The diabetes educator works with the person with or at risk for diabetes to identify mutually acceptable goals. The goals reflect information obtained through the assessment process. Goals should be specific, measurable, attainable, realistic, and timely.

Measurement Criteria	The diabetes educator: • expresses goals in clearly defined terms with measurable outcomes • defines specific behavioral objectives and actions in an educational setting • develops goals that are consistent with accepted diabetes practice guidelines • considers known and perceived risks and benefits of the proposed goal • develops goals with consideration to resources available to the client • defines goals that are appropriate to the client's state of health • redefines goals as needed to best meet the client's needs
Standard 3: Planning	The diabetes educator develops the DSME/T plan to attain the mutually defined goals to achieve desired outcomes. The plan integrates current diabetes care practices and established principles of teaching and learning. The plan is coordinated among the diabetes healthcare team members, the person with or at risk for diabetes, his or her family, significant others, and other relevant support systems, and the referring provider.
Measurement Criteria	The diabetes educator: • addresses specific desired goals and outcomes • identifies and describes specific instructional strategies to be used, which reflect the needs, skills, abilities, learning style, and preferences of the client (strategies may include but are not limited to discussion, demonstration, role-playing, and simulations) • demonstrates respect for the client's culture, lifestyle, and health beliefs • uses measurable, behaviorally focused terms • recognizes the DSME/T plan as dynamic, and the plan reflects inevitable changes in clients' needs and goals • describes the process to be used for evaluation of effectiveness • recognizes DSME/T as a lifelong process because of the chronic nature of the disease, evolving knowledge related to management of diabetes, and changing needs, desires, and abilities of the person with or at risk for diabetes
Standard 4: Implementation	The diabetes educator provides DSME/T according to the defined plan and desired goals and outcomes. Implementation may involve collaboration with other professional and community resources and services.

Measurement Criteria	The diabetes educator: • provides an accessible, safe, and appropriate environment for DSME/T • uses teaching materials appropriate to the learner's age, culture, learning style, and abilities • structures DSME/T to progress from basic safety and survival skills to advanced information for daily self-management and improved outcomes • addresses basic diabetes self-management skills, including safe medication use, meal planning, self-monitoring of blood glucose, and recognizing when and how to access resources and professional services • provides increasingly advanced DSME/T, based on the person's needs and goals, on topics including healthy eating, being active, preventing and managing chronic complications, psychosocial adjustment, developing problem-solving skill, adjusting treatment regimens (including insulin and oral diabetes medications), stress management, travel situations, and pattern management • provides opportunities for peer support • integrates the DSME/T plan into the overall plan of care • shares the diabetes educational plan and progress with referring providers • establishes means for follow-up and continuity of DSME/T, including referrals to other providers • may provide group education for DSME/T to foster support, encouragement, and empowerment through the sharing of experiences
Standard 5: Evaluation	The diabetes educator evaluates individual outcome measures for each person with diabetes, aggregate outcome measures for the program, and the quality and outcomes of DSME/T according to the 5 Standards for Outcome Measurement defined by AADE.

Measurement Criteria	The diabetes educator: • measures behavior change as a unique outcome measurement for DSME/T • determines the effectiveness of DSME/T in the AADE7™ diabetes self-care behavior measures at individual, program, and population levels • evaluates diabetes self-care behaviors at baseline and then progress towards attainment of individual goals at regular intervals • assesses the continuum of outcomes, including learning, behavioral, clinical, and health status, to demonstrate the interrelationship between DSME/T and behavior change in the care of individuals with diabetes • uses individual outcomes to guide the intervention and improve care for that client and uses aggregate population outcomes to guide programmatic services and for continuous quality improvement activities for the DSME/T and the population it serves • establishes with the client, a personalized follow-up plan for ongoing diabetes self-management support (DSMS)
Standard 6: Documentation	The diabetes educator establishes a complete and accurate record of the client's DSME/T experience and follow up DSMS.
Measurement Criteria	The diabetes educator: • documents all components of DSME/T (assessment, planning, implementation, and evaluation) • clearly identifies short-term, intermediate-term, and long-term goals/outcomes • organizes the DSME/T record to allow for tracking of relevant individual goals and outcomes • ensures that the DSME/T assessment, plan, outcomes, and prior implementation and encounters, including the DSMS, are accurate and available to others involved in the client's care, as appropriate (e.g., to other members of the DSME/T team, to the client's primary provider, or to the referring provider) • organizes documentation to facilitate prospective, concurrent, and retrospective scientific and economic analyses • ensures that documentation of specific client information and any release thereof complies with the federal Health Information Portability and Accountability Act (HIPAA)[34]

In addition to these Standards of Professional Performance for Diabetes Educators, several specific disciplines, including nurses, pharmacists and dietitians have developed Standards of Professional Performance.[19,31,32, 33]

Summary

The Scope of Practice, Standards of Practice, and Standards of Professional Performance for Diabetes Educators supports the work of diabetes educators and others dedicated to excellence in the care of persons with or at risk for diabetes and related conditions. As the understanding of diabetes, the treatment options, and the demand for diabetes services increase, the diabetes educator must be prepared to critically evaluate and challenge current practice standards and guidelines and be willing to explore new avenues to improve both processes and outcomes of diabetes care. Similarly, the scope and standards defined in this document have and will continue to evolve to meet the needs of diabetes educators and other health professionals and, above all, to foster excellence of DSME/T to the benefit of persons at risk for and those with diabetes.

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APPENDIX 1

Credentialing Options for Diabetes Educators

Certified diabetes educators (CDE®), in addition to fulfilling the requirements of a diabetes educator, meet the academic, professional, and experiential requirements set forth by the National Certification Board for Diabetes Educators (NCBDE).[26] As part of the application process, a diabetes educator must document that he or she meets all the criteria for certification. An accepted applicant must demonstrate competency in the required body of knowledge and skills by passing an online examination. NCBDE defines the criteria for certification as a diabetes educator, conducts the examination and awards the certificate for those who meet all criteria. See http://www.ncbde.org/ for additional information.

Board Certification in Advanced Diabetes Management (BC-ADM) is an advanced credential that is available to members of more than one discipline. Nurse practitioners, clinical nurse specialists, dietitians, and registered pharmacists may apply. The BC-ADM incorporates skills and strategies of DSME/T into the more comprehensive clinical management of people with diabetes. Differences in the preparation, scope, and practice of diabetes educators (certified or not) and BC-ADMs may make dual credentialing desirable for some. For example, a diabetes educator or CDE® may also have the BC-ADM credential, provided he or she meets the academic and practice requirements for BC-ADM certification. See http://www.diabeteseducator.org/ProfessionalResources/Certification/BC-ADM/ for additional information.

APPENDIX 2

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APPENDIX 3

The Standards of Professional Performance for Diabetes Educators

Standard 1: Quality of Care

The diabetes educator engages in an ongoing, systematic evaluation of the quality of care and the effectiveness of his or her own professional performance. The National Academy of Science's Institute of Medicine has defined quality in health care as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."[31] The diabetes educator must consider both what is done (the content of the care) and how it is done (the process of care).

Measurement Criteria

The diabetes educator:

- demonstrates excellence and professionalism in the practice of DSME/T through actions that are consistent with established professional practice guidelines and established local, state, and federal regulations;
- participates in quality improvement activities;
- identifies both process and outcome measures;
- systematically reviews, evaluates, and documents both processes and outcomes of DSME/T and diabetes self-management support (DSMS);
- implements appropriate actions to address discrepancies between planned processes and expected outcomes and actual processes and outcomes; and
- advocates for the provision of diabetes care and education as part of public policy.

Standard 2: Professional Performance Appraisal

The diabetes educator appraises his or her own performance to identify areas of strength and areas for improvement and to develop a plan for improvement and growth.

Measurement Criteria

The diabetes educator:

- engages in planned, systematic self-evaluation at regular intervals to identify professional strengths and weaknesses;
- seeks and uses input from colleagues and clients in the self-evaluation process;
- identifies and describes specific needs for professional development;
- develops a plan for professional development and sets goals for further development;

- documents findings and monitors professional appraisal and plans for professional development; and
- synthesizes and uses the results of professional development self-evaluation to make recommended changes relating to workplace policies, procedures and protocols.

Standard 3: Professional Development

The diabetes educator assumes responsibility for his or her own professional development and pursues continuing education to develop and maintain DSME/T knowledge and skills.

Measurement Criteria

The diabetes educator:

- develops, implements, and evaluates a plan for professional growth based on findings from the
- performance appraisal;
- pursues professional continuing education, progressing from basic through advanced curricula; strives to meet academic, professional, and experiential requirements and to achieve and maintain certification with-in the diabetes specialty and documents professional development activities, which facilitates ongoing monitoring and awareness of progress to achieve personal and professional goals; and
- takes active leadership roles within the local, state and national diabetes community.

Standard 4: Collegiality

The diabetes educator recognizes and respects the unique knowledge and experience of professional colleagues from a variety of disciplines.

Measurement Criteria

The diabetes educator:

- shares his or her unique diabetes knowledge and skills with colleagues (healthcare providers in related disciplines, students, interns, or other individuals in training) and policy makers involved in diabetes care programs, particularly when new therapies, information, and technological advancements in diabetes care occur;
- acknowledges and supports aspects of DSME/T provided by other team members;
- contributes to the development of students, interns, and other trainees through formal education and mentorship;
- collaborates with colleagues and clients to influence public policy so that quality and availability of DSME/T are improved; and

- provides constructive feedback to colleagues regarding practices to improve diabetes care.

Standard 5: Ethics

Ethical decisions and actions reflect the interests of the person with or at risk for diabetes. The AADE code of ethics represents the values of the diabetes education profession and provides guidance for professional behavior.[32]

Measurement Criteria

The diabetes educator:

- respects and upholds basic human rights;
- demonstrates professional integrity;
- maintains patient confidentiality;
- discloses all potential or perceived conflicts of interest when appropriate;
- respects the uniqueness, dignity, and autonomy of each individual;
- accepts responsibility and accountability for professional competence; and
- reports illegal, incompetent or impaired practice.

Standard 6: Collaboration

The diabetes educator is one member of a group of professionals with shared responsibility for promoting and providing quality care to persons with or at risk for diabetes (the educator's clients).

Measurement Criteria

The diabetes educator:

- participates in developing and maintaining a multidisciplinary team that may include (but is not limited to) nurses, dietitians, pharmacists, other health professionals, referring providers, and members of the community with special interest or expertise relative to the care of persons with or at risk for diabetes;
- articulates the role of the diabetes educator to the client, multidisciplinary team members, referring providers, and others;
- recommends and promotes public policy changes and changes in the community setting to help individuals successfully prevent and/or live with diabetes;
- works in partnership with the client, his or her family, significant others, and other healthcare providers to define outcomes and processes to achieve them;
- promotes positive conflict resolution strategies to resolve differences;
- promotes delivery of consistent information among clients and healthcare providers;
- provides referrals for appropriate follow-up; and

- shares the diabetes education plan and progress with referring providers and other members of the diabetes care team.

Standard 7: Research

The diabetes educator critically evaluates and applies research findings to enhance practice. The educator participates in DSME/T-related research when appropriate.

Measurement Criteria

The diabetes educator:

- seeks and critically evaluates research to enhance practice; and
- applies research findings to develop or revise policies, procedures, practice guidelines, protocols, education, behavior change strategies, and clinical pathways.

When appropriate, the diabetes educator:

- identifies and prioritizes research problems,
- identifies sources and applies for funding for research questions,
- promotes research through alliances and collaborations with other professions and organizations,
- conducts research activities in compliance with human subject protection and HIPAA regulations, and
- reports research findings.

Standard 8: Resource Utilization

The diabetes educator uses resources effectively and efficiently.

Measurement Criteria

The diabetes educator:

- identifies available and needed resources to support a personal plan for professional development,
- identifies available and needed resources to facilitate DSME/T and DSMS
- provides a teaching environment that addresses client privacy, safety, and accessibility; space requirements for teaching activities and storage of materials; and client comfort, including but not limited to adequate lighting, ventilation, and furniture,
- assists the person with diabetes and his/her family and significant others to identify and secure appropriate and available services to address health-related issues and needs
- incorporates available and emerging technologies into the DSME/T process,

- ensures that additional professional and support staff are appropriately trained to meet the needs of the client population,
- systematically documents resources used (including personnel, funds, materials, equipment, and space),
- justifies the need for additional resources through careful documentation of the impact of the resource on defined program goals, and
- provides information regarding appropriate and available diabetes care resources and services to clients, their support systems, and other professionals.

Maine DHHS
MAINE CDC - DIABETES PREVENTION AND CONTROL PROGRAM
286 Water Street - 11 State House Station
Augusta, Maine 04333-0011
(207) 287-5380

DIABETES SELF-MANAGEMENT TRAINING (DSMT) PROGRAM

Letter of Understanding for Calendar Year 2014

This is a *Letter of Understanding* between the Maine CDC - Diabetes Prevention and Control Program (DPCP) and _____describing
(Sponsoring Agency/Institution)

responsibilities of each party in presenting the DSMT Program. The DSMT Program is delivered as a part of a statewide effort supporting diabetes self-management education.

The Sponsoring Institution will:

1. Establish a written institutional policy committing to the creation, delivery, and maintenance of the DSMT Program at the site.
2. Deliver the DSMT Program in accordance with guidelines and criteria outlined in the DSMT Program Manual.
3. Designate a Coordinator and Instructors to coordinate and implement the DSMT Program at the site. Coordinator and Instructor responsibilities are listed in the DSMT Program Manual.
4. Obtain continuing education annually (coordinator, instructors) as outlined in the DSMT Program Manual. New instructors must attend the DPCP New Instructor Program.
5. Designate a Physician Advisor for the DSMT Program at the site. The Advisor's responsibilities are listed in the DSMT Program Manual.
6. Offer the DSMT Program at least four (4) times annually.
7. Designate a standing Advisory/Oversight Committee for the site's DSMT Program. Composition and responsibilities of the Committee are listed in the DSMT Program Manual.
8. Allocate sufficient funds to the DSMT Program budget to cover program expenses.
9. Encourage and support the DSMT Program Coordinator and Instructors to attend continuing education workshops.
10. Document participant encounters (e.g. assessment, plan of care, clinical and behavioral outcomes) using DSMT Program data forms, computer software, or other electronic software of the site's choice.
11. Participate in site visits conducted by the DPCP on an as needed basis.
12. Submit to the DPCP a copy (electronically or hard copy) of all documentation (including but not limited to - Annual Status Reports- clinical and behavior goals outcomes tracking) related/sent to ADA or AADE at the same time documentation is due/submitted to these recognition organizations.
13. Notify DPCP within 30 days of any changes related to Education Recognition Program status including notification of loss or reinstatement of Education Recognition. This LOU must be submitted to the Maine DPCP by January 31st of the calendar year. Failure to

The Maine CDC - Diabetes Prevention and Control Program will:

1. Coordinate and conduct the New Instructor Program for newly designated DSMT Program coordinators and instructors twice a year.
2. Provide a DSMT Program Manual to each participant at the New Instructor Program.
3. Provide ongoing educational consultation and technical assistance to each DSMT Program site as requested by site personnel.
4. Audit each site's file annually to assure adherence to quality standards.
5. Conduct on-site site visits as necessary.
6. Serve as a liaison between the site and third-party payers to assist sites in securing reimbursement for the DSMT Program.
7. Maintain bi-annually for the State of Maine Bureau of Insurance the DSMT program site registry to ensure State recognition which qualifies sites for DSMT reimbursement.
8. Inform sites of the current status and availability of all DPCP programs and activities including those provided by internal and external partners.
9. Inform sites of continuing medical education programs in the prevention, detection, treatment, and control of diabetes and diabetes-related complications.
10. Serve as a resource and referral center for questions and requests related to diabetes prevention and management.

Maine DHHS
MAINE CDC - DIABETES PREVENTION AND CONTROL PROGRAM
286 Water Street - 11 State House Station
Augusta, Maine 04333-0011
(207) 287-5380

DIABETES SELF-MANAGEMENT (DSMT) PROGRAM

Letter of Understanding for Calendar Year 2014

Please ensure that this LOU is completed and returned to the Maine DPCP not later than January 31st, 2014.

1. **Sponsoring Institution:**_____

2. **Coordinator:**
   Name: _____
   Mailing Address: _____
   Phone: _____Fax:_____
   Email: _____

3. **Instructors (must include at least 1 RN and 1 RD)**

   Name: _____ Credentials: _____
   Mailing Address: _____
   Phone: _____Fax:_____
   E-mail _____

   Name: _____ Credentials: _____
   Mailing Address: _____
   Phone: _____Fax:_____
   E-mail _____

   Name: _____ Credentials: _____
   Mailing Address: _____
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E-mail _____

Name: _____ Credentials: _____
Mailing
Address: _____
Phone: _____Fax:_____
E-mail _____

4. Physician Advisor:

Name: _____
Mailing
Address: _____
Phone: _____Fax:_____
E-mail _____

UNDER THIS *LETTER OF UNDERSTANDING,* EACH PARTY AGREES TO MAKE A GOOD FAITH EFFORT TO COMPLY WITH THE TERMS OF THE *LETTER.*

_____ _____
(Sponsoring Institution Administrator) (Date)

_____ _____
(Commissioner, Department of Health and Human Services) (Date)

American Dietetic Association Revised Standards of Practice and Standards of Professional Performance for Registered Dietitians (Generalist, Specialty, and Advanced) in Diabetes Care

Jackie L. Boucher, MS, RD, LD, CDE; Alison Evert, MS, RD, CDE; Anne Daly, MS, RD, BC-ADM, CDE; Karmeen Kulkarni, MS, RD, BC-ADM, CDE; Jo-Anne Rizzotto, MEd, RD, LDN, CDE; Kathryn Burton, MS, RD, LD, CDE; Beverly G. Bradshaw, PhD, RD

Approved September 2010 by the Quality Management Committee of the American Dietetic Association House of Delegates and the Executive Committee of the Diabetes Care and Education Dietetic Practice Group of the American Dietetic Association. **Scheduled review date:** January 2016. Questions regarding the revised Standards of Practice and Standards of Professional Performance for registered dietitians in diabetes care may be addressed to ADA Quality Management staff at quality@eatright.org; Sharon McCauley, MS, MBA, RD, LDN, FADA, director of Quality Management, or Cecily Byrne, MS, RD, LDN, manager of Quality Management.

Editor's note: Figures 1, 2, and 3 that accompany this article are available online at www.adajournal.org.

The Diabetes Care and Education Dietetic Practice Group (DCE DPG) of the American Dietetic Association (ADA), under the guidance of the ADA Quality Management Committee and Scope of Dietetics Practice Framework Sub-Committee, has revised the Standards of Practice (SOP) and Standards of Professional Performance (SOPP) for registered dietitians (RDs) in diabetes care (see the Web site exclusive Figures 1, 2, and 3 at www.adajournal.org). The SOP and SOPP for RDs in diabetes care were originally published in 2005 (1) and were scheduled for periodic review and revision. The revised documents reflect advances in diabetes nutrition practice during the past 5 years and replace the 2005 standards. These documents build on the ADA revised 2008 SOP for RDs in nutrition care and SOPP for RDs (2). The SOP in nutrition care address the four steps of the Nutrition Care Process and activities related to patient/client care (3). They are designed to promote the provision of safe, effective, and efficient food and nutrition services, facilitate evidence-based practice, and serve as a professional evaluation resource. The SOPP are authoritative statements that describe a competent level of behavior in the professional role. Categorized behaviors that correlate with professional performance are divided into six separate standards.

ADA's Code of Ethics (4) and the revised 2008 SOP in nutrition care and SOPP for RDs (2) are decision tools within the Scope of Dietetics Practice Framework (5) that guides the practice and performance of RDs in all settings. The concept of scope of practice is fluid (6), changing in response to the expansion of knowledge, the health care environment, and technology. An RD's legal scope of practice is defined by state legislation (eg, state licensure law) and will differ from state to state. An RD may determine his or her own individual scope of practice using the Scope of Dietetics Practice Framework (5), which takes into account federal regulations; state laws; institutional pol-

J. L. Boucher *is vice-president of education and a certified diabetes educator, Minneapolis Heart Institute Foundation, Minneapolis, MN.* ***A. Evert*** *is diabetes nutrition educator/coordinator of diabetes education programs and a certified diabetes educator, University of Washington Medical Center, Diabetes Care Center, Seattle.* ***A. Daly*** *is director of nutrition and diabetes education, board-certified in advanced diabetes management, and a certified diabetes educator, Springfield Diabetes and Endocrine Center, Springfield, IL.* ***K. Kulkarni*** *is director, scientific affairs, board-certified in advanced diabetes management, and a certified diabetes educator, Abbott Diabetes Care, Salt Lake City, UT.* ***J. Rizzotto*** *is director of educational services and a certified diabetes educator, Joslin Diabetes Center, Boston, MA.* ***K. Burton*** *is a junior research associate and a certified diabetes educator, University of Cincinnati, Cincinnati, OH.* ***B. G. Bradshaw*** *is adjunct assistant professor, Division of Nutrition, University of Utah, Salt Lake City.*

Address correspondence to: Cecily Byrne, MS, RD, LDN, Manager, Quality Management, American Dietetic Association, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995. E-mail: cbyrne@eatright.org

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In October and November 2010, the House Leadership Team of the American Dietetic Association House of Delegates approved the Council on Future Practice's Dietetics Career Development Guide, as well as definitions for focus area of dietetics practice, specialist, and advanced practice, respectively. The Dietetics Career Development Guide is based on the Dreyfus Model of Skill Acquisition* which suggests that as a person acquires and develops a skill, s/he ". . . usually passes through at least five stages of qualitatively different perceptions of his task and/or mode of decision-making as his skill improves." The stages are: novice, advanced beginner, competent, proficient, and expert.

At the competent stage, a dietetics practitioner has just obtained the RD or DTR credential, starting in an employment situation, and gains on the job skills as well as tailored continuing education to enhance skills and knowledge. The RD or DTR as a beginner starts the technical training and interaction for advancement and breadth of competence. At the proficient stage, the RD or DTR is three plus years beyond entry into the profession, has obtained operational job performance skills and is successful in the chosen focus area of practice. The RD or DTR may begin to acquire specialist credentials, if available, to demonstrate proficiency in a focus area of practice. At the expert stage, the RD or DTR is recognized within the profession and has mastered the highest degree of skill in or knowledge of a certain focus or generalized area of dietetics through additional knowledge, experience, or training.

The Council on Future Practice has recommended with approval by the Quality Management Committee and Scope of Dietetics Practice Framework Sub-committee that all future practice-specific Standards of Practice (SOP) and Standards of Professional Performance (SOPP) use the terms *competent, proficient,* and *expert* to describe the levels of dietetics practice, versus the terminology generalist, specialty, and advanced. In addition, these documents will be referred to as *focus area SOP and SOPP.*

At press time, the *Revised SOP and SOPP for RDs in Diabetes Care* contains the verbiage generalist, specialty, and advanced to describe the levels of dietetics practice. Because the *Revised SOP and SOPP for RDs in Diabetes Care* was approved for publication in September 2010, it was not feasible to incorporate the changes in terminology. In future focus area SOP and SOPP publications, the levels of practice will be referred to as competent, proficient, and expert.

For questions on the Dietetics Career Development Guide or its terminology, please visit www.eatright.org/futurepractice.

*Dreyfus HL, Dreyfus SE. *Mind Over Machine.* New York, NY: The Free Press; 1986.

icies and procedures; and individual competence, accountability, and responsibility for his or her own actions.

ADA's revised 2008 SOP in nutrition care and SOPP (2) reflect the minimum competent level of dietetics practice and professional performance for RDs. ADA's SOP in nutrition care and SOPP serve as blueprints for the development of practice-specific SOP and SOPP for RDs in generalist, specialty, and advanced levels of practice.

The standards are a guide for self-evaluation and expanding practice, a means of identifying areas for professional development, and a tool for demonstrating competence in delivering diabetes care and education. They are used by RDs to assess their current level of practice and to determine the education and training required to maintain currency in their practice area and advancement to a higher level of practice. In addition, the standards may be used to assist RDs in transitioning their knowledge and skills to a new practice area. Like the revised 2008 SOP in nutrition care and SOPP for RDs, the revised SOP and SOPP for RDs in diabetes care were developed with input and consensus of content experts representing diverse practice and geographic perspectives and were reviewed and approved by the Executive Committee of the DCE DPG, the Scope of Dietetics Practice Framework Sub-Committee, and ADA's Quality Management Committee.

Three levels of practice in diabetes care—generalist, specialty, and advanced—are defined (7). A general practitioner (or generalist) is an individual whose practice includes responsibilities across several areas of practice, including, but not limited to, more than one of the following: community, clinical, consultation and business, research, education, and food and nutrition management. The generalist level also includes entry-level practitioners. An entry-level practitioner, as defined by the Commission on Dietetic Registration, has <3 years of registered practice experience and demonstrates a competent level of dietetics practice and professional performance. A specialty practitioner is an individual who primarily concentrates on one aspect of the profession of dietetics. This specialty may or may not have a credential and additional certification, but often includes expanded roles beyond entry level practice. An advanced practitioner has acquired the expert knowledge base, complex decision-making skills, and competencies for expanded practice, the characteristics of which are shaped by the context in which he or she practices. Advanced practitioners may have expanded or specialty roles or both. Advanced practice may or may not include additional certification. Generally the practice is more complex, and the practitioner has a higher degree of professional autonomy and responsibility.

These standards, along with ADA's Code of Ethics (4), answer the questions: "What uniquely qualifies an RD to provide diabetes nutrition services?" and, "What knowledge, skills, and competencies does an RD need to demonstrate for the provision of safe, effective, and quality diabetes care at the generalist, specialty, and advanced levels?"

OVERVIEW

Diabetes is a significant health challenge. In 2007 in the United States, estimates suggested that nearly 24 million individuals had diabetes and another 57 million were at increased clinical risk of developing this chronic disease (ie, prediabetes) (8). Diabetes has consistently been among the top causes of morbidity and mortality among patients with chronic disease, and the costs associated with diabetes care place a significant financial burden on the country's health care system. It is well-documented that keeping blood glucose and blood pressure at near-normal levels significantly reduces diabetes complications (9,10). Yet despite this widely known information, the National Health and Nutrition Examination Survey data have observed that the age-adjusted percentage of people achieving glycemic, blood pressure, and cholesterol targets (ie, all three targets) increased only from 7.0% in the period 1999-2002 to 12.2% in the period between 2003 and 2006 (11). Although the proportion of those achieving these three targets appears to be increasing, there remains a significant proportion of individuals with diabetes who fail to achieve recommended hemoglobin A1c (HbA1c), blood pressure, and cholesterol levels.

Given the rapid rise of diabetes over the past several decades and the immense opportunity to improve diabetes-related measures, the need for RDs with diabetes expertise is critical to improve the health of individuals both at risk for diabetes and with diabetes. Nutrition has been recognized as one of the three cornerstones of diabetes management, along with medication therapy and exercise. Studies implementing a variety of nutrition interventions report a reduction in HbA1c levels (12-15). Strong evidence suggests that the quantity as well as the type of carbohydrate determine the postprandial blood glucose levels (12,13). In addition, some studies also report improvements in lipid profiles, improved weight management, adjustments in medications, and a reduction in the risk for onset and progression of comorbidities with nutrition intervention (14). Diabetes medical nutrition therapy (MNT) provided by RDs can effectively decrease HbA1c by approximately 1% to 2% (range −0.5% to −2.6%), depending on the type and duration of diabetes (14,15). MNT has the greatest effect following the initial diagnosis and continues to be effective throughout the disease process. Outcomes of nutrition interventions are generally measureable in 6 weeks to 3 months and evaluations by an HbA1c test should be done at this time. If a patient's/client's glycemic control has not clinically improved at 3 months, the RD should contact the referral source and recommend the need for initiation or a change in diabetes medication.

Nutrition therapy provided by an RD can also help individuals prevent or delay the development of diabetes. Intensive lifestyle changes (ie, at least 150 minutes/week of physical activity and reduced energy intake) and weight loss (ie, 7% of initial body weight) have been demonstrated to reduce diabetes risk (16). In the first 2.8 years of the Diabetes Prevention Program (DPP) (16), diabetes incidence in high-risk adults was reduced by 58% as a result of these intensive lifestyle interventions and 31% by metformin only compared with placebo. Ten years later at follow-up, the DPP participants who had received the original intensive lifestyle intervention had maintained their lower rate of diabetes onset (17).

RDs providing diabetes care recognize that effectively addressing the challenges of managing and preventing diabetes requires specialized knowledge and skills. The Diabetes Control and Complications Trial (DCCT) documented the expanded role of RDs in the care of type 1 diabetes; the DCCT established RDs as more active team participants focused not only on nutrition, but on assisting with medication therapy, weight management, and exercise strategies to improve glycemic control (18,19). The United Kingdom Prospective Diabetes Study documented the role of dietitians as research interventionists and demonstrated the influence of diet in the treatment of type 2 diabetes (20-22). The DPP documented the expanded RD role in preventing type 2 diabetes. RDs served as case managers, and in some centers, the RDs served as program coordinators and participated on national study committees (23). In both the DCCT and DPP, RDs designed and conducted ancillary substudies and participated in writing groups for the primary results articles. Beyond these large trials, the RD role has also expanded to include teaching self-management skills that include proper administration of injectable medications, self-blood glucose monitoring, insulin pump therapy, and teaching individuals how to treat hypoglycemia and hyperglycemia (24). In some clinical settings an RD's role has evolved to include a role in managing dyslipidemia and blood pressure through use of stepwise protocols to initiate and titrate medications (25-27).

RDs in diabetes care work as members of multidisciplinary health care teams in a variety of work environments (eg, clinics, education centers, hospitals, community health settings, health plans, industry, or private practice). Nutrition education and counseling are integral components of high quality diabetes care. MNT pertains to clinical management and, as such, is conducted by RDs. The differences between the provision of nutrition education and counseling in diabetes care were defined and described in a Diabetes White Paper (28). Diabetes self-management training and community programs include nutrition education (ie, instructional methods) that promote healthful behaviors by imparting information that individuals and groups can use to make informed decisions about food, eating habits, and health (28). MNT "is an evidence-based application of the Nutrition Care Process focused on prevention, delay or management of diseases and conditions, and involves an in-depth assessment, periodic re-assessment and intervention." (7) MNT services are defined in Medicare statutes as "nutritional diagnostic, therapy, and counseling services for the purpose of disease management which are furnished by an RD" (29). (Medicare MNT Benefit).

ADA REVISED STANDARDS OF PRACTICE AND STANDARDS OF PROFESSIONAL PERFORMANCE FOR RDs (GENERALIST, SPECIALTY, AND ADVANCED) IN DIABETES CARE

An RD may use the Revised SOP and SOPP (generalist, specialty, and advanced) for RDs in diabetes care (see the Web site exclusive Figures 1, 2, and 3 at www.adajournal.org) to:

- identify the competencies needed to provide diabetes care inclusive of diabetes self-management training and MNT;

How to Use the *Revised Standards of Practice and Standards of Professional Performance for Registered Dietitians (Generalist, Specialty, and Advanced) in Diabetes Care* as part of the *Professional Development Portfolio* Process[a]	
1. Reflect	Assess your current level of practice and whether your goals are to expand your practice or maintain your current level of practice. Review the Standards of Practice and Standards of Professional Performance document to determine what you want your future practice to be, and assess your strengths and areas for improvement. These documents can help you set short- and long-term professional goals.
2. Conduct learning needs assessment	Once you have identified your future practice goals, you can review the Standards of Practice and Standards of Professional Performance document to assess your current knowledge, skills, behaviors, and define what continuing professional education is required to achieve the desired level of practice.
3. Develop learning plan	Based on your review of the Standards of Practice and Standards of Professional Performance, you can develop a plan to address your learning needs as they relate to your desired level of practice.
4. Implement learning plan	As you implement your learning plan, keep reviewing the Standards of Practice and Standards of Professional Performance document to re-assess knowledge, skills, and behaviors and your desired level of practice.
5. Evaluate learning plan process	Once you achieve your goals and reach or maintain your desired level of practice, it is important to continue to review the Standards of Practice and Standards of Professional Performance document to re-assess knowledge, skills, and behaviors and your desired level of practice.

Figure 4. Application of the Commission on Dietetic Registration *Professional Development Portfolio* Process.[a]The Commission on Dietetic Registration *Professional Development Portfolio* process is divided into five interdependent steps that build sequentially upon the previous step during each 5-year recertification cycle and succeeding cycles.

- self-assess whether he or she has the appropriate knowledge base and skills to provide safe and effective diabetes care for their individual level of practice;
- identify the areas in which additional knowledge and skills are needed to perform at the generalist, specialty, or advanced level of diabetes care practice;
- provide a foundation for public and professional accountability in diabetes care;
- assist management in the planning of diabetes care services and resources;
- enhance professional identity and communicate the nature of diabetes care;
- guide the development of diabetes care-related education and continuing education programs, job descriptions, and career pathways; and
- assist preceptors in teaching students and interns the knowledge, skills, and competencies needed to work in diabetes care and the understanding of the full scope of this profession.

This approach to professional standards allows for recognition of the independent provider status for RDs resulting from the Medicare MNT statute that became effective January 1, 2001. Independent provider status recognizes the RD credential as indicating that an individual is qualified to provide and be reimbursed directly for MNT services (30,31). The standards are also reflective of the knowledge and skills required for additional certifications. Current certifications available to an RD in diabetes care are certified diabetes educator (CDE), a specialty certification, and the Board certified–advanced diabetes management (BC-ADM), an advanced practice certification. RDs with the demonstrated level of competence (ie, who meet the revised Standards of Practice and Standards of Professional Performance for RDs in diabetes care), along with the appropriate hours of practice and who meet any additional requirement of the credentialing boards for the CDE or the BC-ADM certifications, can also choose to obtain the CDE or BC-ADM credentials. More information on obtaining the CDE credential is available from the National Certification Board for Diabetes Educators (www.ncbde.org) (32-34) whereas information on the BC-ADM credential (33,34) is available from the American Association of Diabetes Educators (www.diabeteseducator.org).

APPLICATION TO PRACTICE

The Dreyfus model (35) identifies levels of proficiency (novice, proficiency, expert) during the acquisition and development of knowledge and skills. This model is helpful in understanding the levels of practice described in the revised SOP and SOPP for RDs in diabetes care. In the ADA practice-specific SOP and SOPP for RDs, the stages are represented as generalist, specialty, and advanced practice levels.

All RDs, even those with significant experience in other practice areas, begin at the novice level (generalist level) when practicing in a new setting. At the novice level (generalist level), an RD in diabetes care is learning the principles that underpin the practice and is developing skills for effective diabetes care. This RD, who may be an experienced RD or may be new to the profession, has a breadth of knowledge in nutrition overall and may have specialty or advanced knowledge/practice in another area. However, an RD new to the specialty of diabetes care may experience a steep learning curve.

At the proficiency stage (specialty level), an RD has developed a deeper understanding of diabetes care and is better equipped to apply evidence-based guidelines and best practices. This RD is also able to modify practice according to unique situations (eg, an RD assesses blood glucose monitoring results and needs for MNT and medication adjustments, calculates insulin-to-carbohydrate ratios and insulin sensitivity factors, and assesses other metabolic outcomes).

At the expert stage (advanced practice level), an RD thinks critically about

Role	Generalist	Specialty	Advanced
Clinical practitioner	An RD in general clinical practice is a Medicare medical nutrition therapy (MNT) provider for patients/clients with diabetes, and works part-time in private practice and part-time at a diabetes outpatient clinic. The RD reviews the Nutrition Practice Guidelines for type 1 and type 2 diabetes mellitus for each aspect of the nutrition care process. The RD then reviews the *Revised SOP and SOPP for RDs in Diabetes Care* to evaluate his or her own skills and competencies for providing care to individuals with diabetes and sets goals to improve competency in this area of practice.	The RD has determined that many of the patients/clients referred for MNT would benefit from instruction on how their food choices impact their glycemic control. The RD wants to instruct patients in the private practice/clinic on how to self-monitor blood glucose (SMBG). The RD reviews the *Revised SOP and SOPP for RDs in Diabetes Care* to evaluate his or her knowledge, skills and competencies for providing instruction on SMBG. The RD learns how to teach SMBG from an advanced practice RD. Review of the Revised SOP for RDs in Diabetes Care reveals that the RD needs to develop skills and competencies in the areas of hypoglycemia recognition and treatment, blood glucose targets, sharp's disposal, and blood borne pathogens. The RD investigates his or her institution's policies and procedures, and local and state policies, procedures, and regulations for performing invasive procedures of this kind. Education, training, and competency to teach these diabetes self-care tasks/skills/topics are documented.	The RD in advanced practice has mastered how to provide instruction on SMBG and is able to teach how food and medication impact glycemic control. The RD has also successfully completed certification to instruct patient/client on use of an insulin pump. The RD has determined that some of his or her patients/clients would benefit from use of a continuous glucose monitoring (CGM) device system to monitor glucose in an effort to better optimize glycemic control. In addition, the RD wants to learn how to interpret pump and CGM device system download data reports to make carbohydrate and insulin dose adjustment recommendations. The RD reviews the *Revised SOP and SOPP for RDs in Diabetes Care* to evaluate his or her knowledge, skills and competencies for providing instruction on use of a CGM device system. The RD also investigates his or her institution's policies and procedures, and local and state policies, procedures, and regulations for performing related invasive procedures, such as insertion of a glucose sensor. Education, training, and competency to instruct patient/client on use of CGM device systems are documented.
Manager	A nutrition services manager of a large hospital oversees a number of RDs providing MNT to individuals with a variety of medical conditions, including diabetes. The manager will consider the *Revised SOP and SOPP for RDs in Diabetes Care* when determining work assignments, expertise needed at the program level, and when assisting staff in evaluating competency and individual needs for additional knowledge and/or skills in MNT for diabetes. The manager recognizes the SOP and SOPP as important tools for staff to use to assess their own competencies and to use as the basis for identifying personal performance plans.	A specialty practice RD who is also a certified diabetes educator (CDE) requests an appointment with his or her department manager to discuss departmental approval for providing instruction on insulin syringe and insulin pen administration. The manager reviews the *Revised SOP and SOPP for RDs in Diabetes Care* available on the ADA Web site (www.eatright.org) to determine whether insulin administration is in the RD SOP. The manager assists the practitioner in investigating institutional policies, procedures, guidelines, and state licensure regulations. Based on the SOP, the manager develops a set of competencies that need to be achieved by the RD/CDE in order to provide instruction on insulin administration. Education, training, and competency to teach insulin administration is documented. The manager also includes this task/skill in the job description for the RD.	There is a vacancy at a diabetes education center for the clinical services department manager. The manager oversees a number of specialty and advanced practice diabetes educators, including RDs. The position has historically been filled by an advanced practice registered nurse (RN) who also holds the Board Certified–Advanced Diabetes Management (BC-ADM) credential. One of the current staff RD/CDEs applies for the position. The RD/CDE uses the *Revised SOP and SOPP for RDs in Diabetes Care* to prepare for his or her interview. Using the *Revised SOP and SOPP for RDs in Diabetes Care* as a guide, the RD/CDE compiles a set of competencies that he or she currently performs at the advanced practice level. The RD/CDE shares this information during the interview with the director making the hiring decision and they discuss any additional competencies the RD/CDE needs to achieve to meet the job requirements. *(continued)*

Figure 5. Case Examples of how the registered dietitian (RD) utilizes the *Revised Standards of Practice (SOP) and Standards of Professional Performance (SOPP) for Registered Dietitians (RDs) (Generalist, Specialty, and Advanced) in Diabetes Care* to assess competencies and set goals as part of the professional development portfolio plan.

Role	Generalist	Specialty	Advanced
Public health practitioner	An RD employed at a county health department wants to provide diabetes prevention classes to individuals identified with pre-diabetes through a community screening. The RD reviews the Diabetes Prevention Program curriculum available online. (http://www.bsc.gwu.edu/dpp/manuals.htmlvdoc) The RD develops a diabetes prevention program for the county health department. The RD then reviews the *Revised SOP and SOPP for RDs in Diabetes Care* to evaluate his or her own knowledge, skills, and competencies for providing instruction to class participants with pre-diabetes.	An RD teaching diabetes prevention classes enjoys working with this population and wants to advance his or her level of practice. The RD reviews nutrition assessment and intervention sections of the *Revised SOP and SOPP for RDs in Diabetes Care* to determine necessary knowledge, skills, and demonstrated competencies to advance to specialty practice and sets applicable goals, including a goal to successfully attain the CDE credential.	The state diabetes prevention and control program manager is an advanced practice RD. This RD has a graduate degree in public health and holds the CDE credential. This individual oversees grant funding for several diabetes initiatives in the state. The program manager wants to conduct continued research on the outcomes of one of the state's diabetes initiatives. The RD reviews the *Revised SOP and SOPP for RDs in Diabetes Care* to develop his or her Professional Development Portfolio with the goal of advancing his or her practice. He or she includes in his or her plan the goals of being a principal investigator for the research study, designing the study, publishing an article in a peer-reviewed journal, and presenting the results at a national diabetes and/or public health-related meeting.
Nontraditional health care practitioner	An RD takes a position as a telephone coach for a health management company working with large employers across the country. As part of the position, the telephone coach will be coaching individuals at risk for diabetes or with active disease. The RD reviews the *Revised SOP and SOPP for RDs in Diabetes Care* to determine the knowledge, skills and competencies he or she will need to assess, identify and coach individuals with prediabetes or diabetes. The RD develops a plan for education and skill development and incorporates into his or her Professional Development Portfolio.	A specialty practice RD/CDE who has been providing telephone coaching for individuals with diabetes for several years sees an opening in the case management department for a case manager to focus on individuals with diabetes and/or heart disease. The RD/CDE would like to more fully utilize his or her specialty level knowledge, skills, and competencies through working more in-depth with patients/clients. The RD/CDE reviews the job description and determines that he or she has the assessment/intervention skills applicable to the job and applies for the position. The RD/CDE reviews the *Revised SOP and SOPP for RDs in Diabetes Care* to prepare for the interview to make sure he or she can demonstrate to the hiring director that he or she has the knowledge, skills and competencies required for the position, which has traditionally been held by RNs. Through the *Revised SOP and SOPP for RDs in Diabetes Care*, the RD/CDE is able to demonstrate that he or she is qualified for the position and provides evidence of applying the necessary knowledge, skills, and competency in practice situations. The RD/CDE is hired and works to create a professional development plan that allows for continued practice at the specialty level.	A health plan has Disease Management Certification for its diabetes management program through the National Committee for Quality Assurance (NCQA). The RD, who also holds the BC-ADM credential, uses the *Revised SOP and SOPP for RDs in Diabetes Care* to assess knowledge, skills, and competencies required for creation of evaluation tools, outcomes systems and collecting and reporting data as part of a quality improvement process to improve diabetes outcomes and quality of care. The advanced practice RD sets goals to advance knowledge or skills as needed.

(continued)

Figure 5. (Continued)

Role	Generalist	Specialty	Advanced
Researcher	An RD takes a new position working for a research study that will compare the benefits of intensive nutritional counseling for diabetes and cardiovascular disease vs a traditional nutritional counseling schedule. The RD will see intensive study participants on a monthly basis for 3 years while standard of care participants will be seen for an initial visit followed by two brief follow-up visits each year. The RD will review the *Revised SOP and SOPP for RDs in Diabetes Care* to assess his or her competencies and identify knowledge, skills, and competencies that may require growth and demonstrated ability for this new role. The RD sets goals to attain any needed competencies before working with study participants.	An RD is hired as a study coordinator for a multi-site research trial that will determine whether intensive blood pressure management, intensive blood glucose management, and decreased protein intake as opposed to standard-of-care treatment can delay progression of renal disease for people with diabetes. He or she screens individuals for appropriateness as study participants, conducts the informed consent process, and oversees the participant visits. The latter includes obtaining blood pressure measurements, instruction on use of study medications (including injectables), and recommended changes in treatment according to the study protocol and with MD approval. He or she reviews the *Revised SOP and SOPP for RDs in Diabetes Care* to ensure that his or her knowledge, skills, and competencies are consistent with the specialty level of practice and to determine knowledge, skills and competencies that may need to be updated.	After conducting a review of current literature, an advanced-practice RD submits a research proposal to a funding agency for a new research study where the RD will be the principal investigator. The clinical trial will seek to determine the effect of intensive nutritional counseling for polycystic ovary syndrome (PCOS) on participant outcomes during pregnancy. As part of his or her research, he or she consults with other health care professionals, and university departments (eg, research consulting unit or institutional review board). He/ She reviews the *Revised SOP and SOPP for RDs in Diabetes Care* for guidance as to areas of knowledge, skills, and competencies that may require growth and demonstrated ability for this new role.

Figure 5. (Continued)

diabetes care, demonstrates a more intuitive understanding of diabetes care and practice, displays a range of highly developed clinical and technical skills, and formulates judgments acquired through a combination of experience and education. Essentially, practice at the advanced level requires the application of composite dietetics knowledge, with practitioners drawing not only on their clinical experience, but also on the experience of diabetes practitioners in various disciplines and practice settings. Experts, with their extensive experience and ability to see the significance and meaning of diabetes care within a contextual whole, are fluid and flexible and, to some degree, autonomous in practice. They not only implement diabetes care, they also drive and direct clinical practice, conduct and collaborate in research, contribute to multidisciplinary teams, and lead the advancement of diabetes care.

Indicators for the revised SOP (Figure 2, available online at www.adajournal.org) and SOPP (Figure 3, available online at www.adajournal.org) for RDs in diabetes care are measurable action statements that illustrate how each standard may be applied in practice. Within the revised SOP and SOPP for RDs in diabetes care, an X in the generalist column indicates that an RD who is caring for patients/clients is expected to complete this activity and/or seek assistance to learn how to perform at the level of the standard. A generalist in diabetes care could be an entry-level RD or an experienced RD who has newly assumed responsibility to provide diabetes care to patients/clients. An X in the specialty column indicates that an RD who performs at this level has a deeper understanding of diabetes care and has the ability to modify therapy to meet the needs of patients/clients in various situations (eg, instruct patient/client how to self-monitor blood glucose in addition to the carbohydrate counting meal planning approach for the patient/client to determine how their food choices affect their glycemic control, and recommends medication adjustments, if needed). An X in the advanced column indicates an RD who performs at this level possesses a comprehensive understanding of diabetes care and a highly developed range of skills and judgments acquired through a combination of experience and education (eg, an RD who instructs patients referred

for MNT on use of an insulin pump to deliver mealtime insulin and on use of a continuous glucose monitor to monitor glucose in an effort to optimize glycemic control). An RD, drawing on experiential and advanced knowledge, uses downloaded insulin pump and continuous glucose monitor data to evaluate insulin-to-carbohydrate ratios and insulin sensitivity factors and make dose adjustment recommendations as indicated).

Bolded type standards and indicators originate from ADA's revised 2008 SOP in nutrition care and SOPP for RDs (2) and should apply to RDs in all three categories. Several indicators not in boldface type are identified as applicable to all levels of practice. Where Xs are placed in all three categories of practice, it is understood that all RDs in diabetes care are accountable for practice within each of these indicators. However, the depth with which an RD performs each activity will increase as the individual moves beyond the generalist level. Level of practice considerations warrant that a holistic view of the revised SOP and SOPP for RDs in diabetes care be taken. It is the totality of individual practice that defines the level of practice and not any one indicator or standard.

RDs should review the revised SOP and SOPP for RDs in diabetes care at regular intervals to evaluate individual nutrition and diabetes care knowledge, skill, and competence. Regular self-evaluation is important because it helps identify opportunities to improve and/or enhance practice and professional performance. This self-appraisal also enables RDs in diabetes care to better utilize the Commission on Dietetic Registration's *Professional Development Portfolio* (36) for self-assessment, planning, improvement, and commitment to lifelong learning. These Standards may be used in each of the five steps in the *Professional Developmental Portfolio* process (see Figure 4). RDs are encouraged to pursue additional training, regardless of practice setting, to maintain currency and to expand individual scope of practice within the limitations of the legal scope of practice, as defined by state law. Individuals are expected to practice only at the level at which they are competent, and this will vary depending on education, training, and experience (37). RDs are encouraged to pursue additional diabetes knowledge, skills training, and competence regardless of practice setting to promote consistency in practice and performance and continuous quality improvement. See Figure 5 for case examples of how RDs in different roles and at different levels of practice may use the revised SOP and SOPP for RDs in diabetes care.

In some instances, components of the revised SOP and SOPP for RDs in diabetes care do not specifically differentiate between specialty and advanced level practice. In these areas, it was the consensus of the content experts that the distinctions are subtle, captured in the knowledge, experience, and intuition demonstrated in the context of practice at the advanced level, which combines dimensions of understanding, performance, and value as an integrated whole (38). A wealth of knowledge is embedded in the experience, discernment, and practice of advanced-level RD practitioners. The knowledge and skills acquired through practice will continually expand and mature. The indicators will be refined as advanced-level RDs systematically record and document their experience using the concept of clinical exemplars. An experienced practitioner observes clinical events, analyzes them to make new connections between events and ideas, and produces a synthesized whole. Clinical exemplars provide outstanding models of the actions of individual RDs in diabetes care in clinical settings and the professional activities that have enhanced patient/client care. Clinical exemplars include a brief description of the need for action and the process used to change the outcome.

FUTURE DIRECTIONS

The revised SOP and SOPP for RDs in diabetes care are innovative and dynamic documents. Future revisions will reflect changes in practice, dietetics education programs, and outcomes of practice audits. The three practice levels require more clarity and differentiation in content and role delineation and competency statements that better characterize differences among the practice levels are needed. Creation of this clarity, differentiation, and definition are the challenges of today's RDs in diabetes care to better serve tomorrow's practitioners and their patients, clients, and customers.

CONCLUSIONS

The revised SOP and SOPP for RDs in diabetes care are complementary documents and are key resources for RDs at all knowledge and performance levels. These standards can and should be used by RDs in daily practice to consistently improve and appropriately demonstrate competency and value as providers of safe and effective diabetes care. These standards also serve as a professional resource for self-evaluation and professional development for RDs specializing in diabetes care. The development and evaluation process is dynamic. Just as a professional's self-evaluation and continuing education process is an ongoing cycle, these standards are also a work in progress and will be reviewed and updated every 5 years. Current and future initiatives of ADA will provide information to use in these updates and in further clarifying and documenting the specific roles and responsibilities of RDs at each level of practice. As a quality initiative of ADA and the DCE DPG, these standards are an application of continuous quality improvement and represent an important collaborative endeavor.

These standards have been formulated to be used for individual self-evaluation and the development of practice guidelines, but not for institutional credentialing or for adverse or exclusionary decisions regarding privileging, employment opportunities or benefits, disciplinary actions, or determinations of negligence or misconduct. These standards do not constitute medical or other professional advice, and should not be taken as such. The information presented in these standards is not a substitute for the exercise of professional judgment by a health care professional. The use of the standards for any other purpose than that for which they were formulated must be undertaken within the sole authority and discretion of the user.

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Glossary of Terms for the Revised SOP and SOPP for RDs in Diabetes Care

AADE7: The American Association of Diabetes Educators (AADE) has defined the AADE7 Self-Care Behaviors as a framework for patient-centered diabetes education and care. The seven self-care behaviors essential for successful and effective diabetes self-management are healthy eating, being active, monitoring, taking medication, problem solving, healthy coping, and reducing risks. The AADE7 Self-Care Behaviors provide an evidence-based framework for assessment, intervention, and outcome (evaluation) measurement of the diabetes patient, program, and population (39-41).

Chronic care model: Comprehensive evidence-based model used in chronic disease prevention and management (42).

Clinical microsystem: A health care framework that focuses on safety and quality of care to reduce medical errors and to promote harm reduction (43).

Competence: The "ability to demonstrate appropriate professional behaviors with desirable outcomes. Professionals who are competent use up-to-date knowledge and skills; make sound decisions based on appropriate data; communicate effectively with patients, customers, and other professionals; critically evaluate their own practice; and improve performance based on self-awareness, applied practice, and feedback from others" (44).

Diabetes Control and Complications Trial (DCCT): A study by the National Institute of Diabetes and Digestive and Kidney Diseases, conducted from 1983 to 1993 in people with type 1 diabetes. The study showed that intensive therapy compared to conventional therapy significantly helped prevent or delay diabetes complications. Intensive therapy included multiple daily insulin injections or the use of an insulin pump with multiple blood glucose readings each day. Complications followed in the study included diabetic retinopathy, neuropathy, and nephropathy (45).

Diabetes Prevention Program (DPP): A study by the National Institute of Diabetes and Digestive and Kidney Diseases conducted from 1998 to 2001 in people at high risk for type 2 diabetes. All study participants had impaired glucose tolerance, also called pre-diabetes, and were overweight. The study showed that people who lost 5% to 7% of their body weight through a low-fat, low-calorie diet and moderate exercise (usually walking for 30 minutes 5 days a week) reduced their risk of getting type 2 diabetes by 58%. Participants who received treatment with the oral diabetes drug metformin reduced their risk of getting type 2 diabetes by 31% (46).

Diabetes self-management training (DSMT): Under Medicare Part B, "diabetes outpatient self-management training services means educational and training services furnished . . . to an individual with diabetes by a certified provider . . . in an outpatient setting by an individual or entity who meets the quality standards . . . , but only if the physician who is managing the individual's diabetic condition certifies that such services are needed under a comprehensive plan of care related to the individual's diabetic condition to ensure therapy compliance or to provide the individual with necessary skills and knowledge (including skills related to the self-administration of injectable drugs) to participate in the management of the individual's condition." (47) "The program includes instructions in self- monitoring of blood glucose; education about diet and exercise; an insulin treatment plan developed specifically for the patient who is insulin-dependent; and motivation for patients to use the skills for self-management. (48) Under Medicare Part B, all DSMT programs must be accredited as meeting quality standards by a Centers for Medicare & Medicaid Services–approved national accreditation organization. Currently, the Centers for Medicare & Medicaid Services recognize the American Diabetes Association Education Recognition Program and the American Association of Diabetes Educators Diabetes Education Accreditation Program as approved national accreditation organizations (49).

Diabetes Self-Management Education (DSME): "Diabetes education, also referred to as diabetes self-management education or diabetes self-management training, is performed by health care professionals who have appropriate credentials and experience consistent with the particular profession's scope of practice."

"DSME involves the person with pre-diabetes or diabetes and/or the caregivers and the educator(s) and is defined as the ongoing process of facilitating the knowledge, skill, and ability necessary for self-care. It is a component of a comprehensive plan of diabetes care. The process incorporates the needs, goals and life experiences of the person with pre-diabetes or diabetes and is guided by evidence-based standards. 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. The process includes:

- An individual assessment and education plan developed collaboratively by the individual and educator(s) to direct the selection of appropriate educational interventions and self-management support strategies.
- Educational interventions directed toward helping the individual achieve self-management goals.
- Periodic evaluations to determine attainment of educational objectives or need for additional interventions and future reassessments.
- A personalized follow-up plan developed collaboratively by the individual and educator(s) for ongoing self-management support.
- Documentation in the education record of the assessment and education plan and the intervention and outcomes."

(Adapted from *National Standards for Diabetes Self-Management Education*, American Diabetes Association Clinical Practice Recommendations. *Diabetes Care*, Vol. 32, Supplement 1, January, 2009 [50].)

Differential nutrition diagnosis: A systematic process of considering various possible nutrition diagnoses, considering the characteristics of each diagnosis in comparison to an individual's presentation, and arriving at a specific nutrition diagnosis. Nutrition diagnoses are well defined in the International Dietetics and Nutrition Terminology Reference Manual, 3rd edition (51).

Evidence-based dietetics practice: The use of systematically reviewed scientific evidence in making food and nutrition practice decisions by integrating best available evidence with professional expertise and client values to improve outcomes (44).

Health literacy: The ability to use reading, writing, and computational skills at a level adequate to meet the needs of everyday situations (52).

Health numeracy: The degree to which individuals have the capacity to access, process, interpret, communicate, and act on numerical, quantitative, graphical, biostatistical, and probabilistic health information needed to make effective health decisions (53).

Intensive therapy: "A treatment for diabetes in which blood glucose is kept as close to normal as possible through frequent injections or use of an insulin pump; meal planning; adjustment of medicines; and exercise based on blood glucose test results and frequent contact with a person's health care team" (54).

Medical nutrition therapy (MNT): "Medical nutrition therapy (MNT) is an evidence-based application of the Nutrition Care Process focused on prevention, delay or management of diseases and conditions, and involves an in-depth assessment, periodic re-assessment and intervention" (44).

MNT services are defined in federal (Medicare Part B) statute as "nutritional diagnostic, therapy, and counseling services for the purpose of disease management which are furnished by a registered dietitian or nutrition professional . . . pursuant to a referral by a physician." MNT is provided by licensed/certified (as applicable) registered dietitians and nutrition professionals (55).

Nutrition Care Process and Model: A systematic problem-solving method that food and nutrition professionals use to think critically and make decisions that address practice-related problems (56).

Nutrition diagnosis: A critical step in the Nutrition Care Process (NCP) in which the practitioner identifies a nutrition problem that can be addressed with nutrition intervention (51).

Nutrition focused physical findings: Part of the assessment phase of the NCP. A skilled practitioner evaluates several aspects of the client's appearance, including hair, skin, eyes, oral cavity, nails, gastrointestinal symptoms (such as appetite, bowel function, nausea, altered taste), neurological findings (confusion, for example), and vital signs (51).

United Kingdom Prospective Diabetes Study: (UKPDS) – A study in the United Kingdom, conducted from 1977 to 1997 in people with Type 2 diabetes. "The study showed that if people lowered their blood glucose, they lowered their risk of eye disease and kidney damage. In addition, those with Type 2 diabetes and hypertension who lowered their blood pressure also reduced their risk of stroke, eye damage, and death from long-term complications" (54,57).

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Standards of Practice are authoritative statements that describe a competent level of practice demonstrated through nutrition assessment, nutrition diagnosis (problem identification), nutrition intervention (planning, implementation), and outcomes monitoring and evaluation (four separate standards) and the responsibilities for which registered dietitians (RDs) are accountable. The Revised Standards of Practice in Diabetes Care presuppose that the RD uses critical thinking skills, analytical abilities, theories, best available research findings, current accepted dietetics and medical knowledge, and the systematic holistic approach of the nutrition care process as they relate to the standards. The Revised Standards of Professional Performance in Diabetes Care are authoritative statements that describe a competent level of behavior in the professional role, including activities related to provision of services; application of research; communication and application of knowledge; utilization and management of resources; quality in practice; and continued competence and professional accountability (six separate standards).

Standards of Practice and Standards of Professional Performance are complementary sets of standards - both serve to completely describe the practice and professional performance of dietetics. All indicators may not be applicable to all RDs' practice or to all practice settings and situations. RDs must be aware of federal and state laws affecting their practice as well as organizational policies and guidelines. The standards are a resource but do not supersede laws, policies, and guidelines.

The term patient/client is used in this evaluation resource as a universal term. Patient/client could also mean client, patient, customer, participant, consumer, or any individual or group who receives diabetes care. Diabetes care and education services are provided to individuals of all ages. These Standards of Practice and Standards of Professional Performance are not limited to the clinical setting. In addition, it is recognized that the family and caregiver(s) of patients of all ages, including individuals with special health care needs, play critical roles in overall health and are important members of the team throughout the assessment and intervention process. The term "appropriate" is used in the standards to mean: Selecting from a range of best practice or evidence-based possibilities, one or more of which would give an acceptable result in the circumstances.

Each standard is equal in relevance and importance and includes a definition, a rationale statement, indicators, and examples of desired outcomes. A standard is a collection of specific outcome-focused statements against which a practitioner's performance can be assessed. The rationale statement describes the intent of the standard and defines its purpose and importance in greater detail. Indicators are measurable action statements that illustrate how each specific standard can be applied in practice. Indicators serve to identify the level of performance of competent practitioners and to encourage and recognize professional growth.

Standard definitions, rationale statements, core indicators, and examples of outcomes found in the American Dietetic Association Standards of Practice in Nutrition Care and Standards of Professional Performance have been adapted to reflect three levels of practice (generalist, specialty, and advanced) in diabetes care. In addition, the core indicators have been expanded upon to reflect the unique competence expectations of the RD in diabetes care.

Standards described as specialty level of practice in this document are not equivalent to the National Certification Board for Diabetes Educators (NCBDE) certification, Certified Diabetes Educator (CDE). Rather, the CDE designation recognizes the skill level of an RD who has developed diabetes nutrition knowledge and application beyond the generalist practitioner. An RD with a CDE designation is an example of an RD who has demonstrated, at a minimum, specialty level skills as presented in this document. Standards described as advanced level of practice in this document are not equivalent to the American Association of Diabetes Educators (AADE) certification, Board Certified–Advanced Diabetes Management (BC-ADM). Rather, the BC-ADM designation recognizes the skill level of an RD who has developed diabetes nutrition knowledge and application beyond the specialty level practitioner. An RD with a BC-ADM designation is an example of an RD who has demonstrated, at a minimum, advanced level skills as presented in this document.

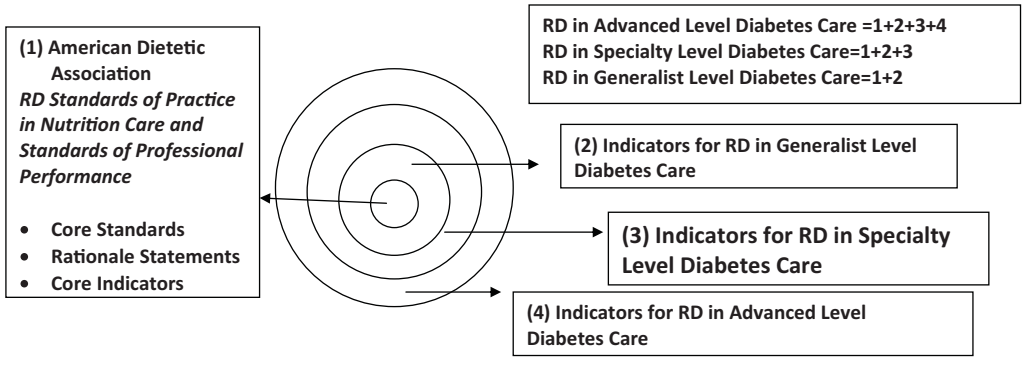

Figure 1. Revised Standards of Practice and Standards of Professional Performance for Registered Dietitians (Generalist, Specialty and Advanced) in Diabetes Care.

Standard 1: Nutrition Assessment:

Registered dietitians (RDs) use accurate and relevant data and information to identify nutrition-related problems.

Rationale: Nutrition assessment is the first of four steps of the Nutrition Care Process. Nutrition Assessment is a systematic process of obtaining, verifying, and interpreting data in order to make decisions about the nature and cause of nutrition-related problems. It is initiated by referral and/or screening of individuals or groups for nutrition risk factors. Nutrition Assessment is an ongoing, dynamic process that involves not only initial data collection, but also reassessment and analysis of client or community needs. It provides the foundation for Nutrition Diagnosis, the second step of the Nutrition Care Process.

Indicators for Standard 1: Nutrition Assessment				**The "X" signifies the indicators for the level of practice**		
(Bold Font Indicators are American Dietetic Association (ADA) Core RD Standards of Practice Indicators)				**Generalist**	**Specialty**	**Advanced**
Each RD:						
1.1	**Evaluates dietary intake for factors that affect health and conditions including nutrition risk**			**X**	**X**	**X**
	1.1A	**Evaluates adequacy and appropriateness of food, beverage and nutrient intake (eg, macro and micronutrients; meal patterns; food allergies)**		**X**	**X**	**X**
		1.1A1	Evaluates appetite changes and possible associated gastrointestinal problems (eg, problems with chewing and swallowing, reflux, vomiting, diarrhea, constipation, irritable bowel syndrome, gastroparesis)	X	X	X
		1.1A2	Evaluates type and distribution of macronutrient intake	X	X	X
	1.1B	**Assesses adequacy and appropriateness of current diet prescription**		**X**	**X**	**X**
		1.1B1	Evaluates current meal planning approach (eg, carbohydrate counting, Exchange Lists for Meal Planning, calorie counting, food pyramid, plate method)	X	X	X
1.2	**Evaluates health and disease condition(s) for nutrition related consequences**			**X**	**X**	**X**
	1.2A	**Evaluates diabetes history, medical history, and family history comorbidities, substance use and abuse behavior and preventative care**		**X**	**X**	**X**
		1.2A1	Evaluates diabetes history; including assessment of diabetes self-management education/training, skills and behaviors (DSME/T) (eg, National Standards for Diabetes Self Management Education–Standard 3; American Association of Diabetes Educators-7 (AADE7) Self-Care Behaviors–healthy eating, being active, monitoring, taking medication, problem solving, healthy coping, reducing risks)	X	X	X
		1.2A2	Evaluates diabetes history of the intensively managed patient/client, including self-management education/training, skills and behaviors, (eg, insulin pump therapy and/or use of continuous glucose monitoring [CGM])		X	X
		1.2A3	Evaluates medical history of health, disease conditions and other comorbidities, (eg, cardiovascular disease, lipid disorders, hypertension, overweight/obesity, kidney disease, peripheral vascular disease, cancer, gastric bypass/banding, stroke, chronic obstructive pulmonary disease [COPD], congestive heart failure [CHF])	X	X	X
		1.2A4	Evaluates family history (eg, diabetes, cardiovascular disease, lipid disorders, hypertension, overweight/obesity, kidney disease, cancer, peripheral vascular disease, stroke)	X	X	X
		1.2A5	**Reviews the history of previous diabetes nutrition care services/medical nutrition therapy**	**X**	**X**	**X**
		1.2A6	Evaluates associated autoimmune comorbidities, (eg, thyroid conditions, Addison's disease, celiac disease, cystic fibrosis related diabetes, pernicious anemia)	X	X	X
		1.2A7	Determines history of tobacco, alcohol, drug use	X	X	X

Figure 2. American Dietetic Association Revised Standards of Practice for Registered Dietitians (Generalist, Specialty, and Advanced) in Diabetes Care.

Indicators for Standard 1: Nutrition Assessment				The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are American Dietetic Association (ADA) Core RD Standards of Practice Indicators)				Generalist	Specialty	Advanced
Each RD:						
	1.2B	**Evaluates physical findings (eg, physical or clinical exam)**		**X**	**X**	**X**
		1.2B1	**Assesses anthropometric measurements (eg, body mass index, waist circumference and/or waist-to-hip ratio)**	**X**	**X**	**X**
		1.2B2	Utilizes recommendations from American Medical Association (AMA)—Physician Quality Reporting Initiative (PQRI) Measures and American Diabetes Association Standards of Medical Care (diabetes.org) as benchmark tools when evaluating physical or clinical findings, (eg, objective screening of sensory sensitivity/ neuropathy using monofilament testing or other tools, urine protein screening, blood pressure, foot and eye exam)		X	X
		1.2B3	Performs nutrition-focused physical examination that includes but is not limited to: injection sites; feet for signs of irritation from shoes, or dry or cracked skin; other body areas for skin conditions related to diabetes (eg, wound, Acanthosis Nigricans or Vitiligo)		X	X
	1.2C	**Assesses and reviews medication adherence and management (eg, prescription, over-the-counter, and herbal medications; medication allergies; medication/food interaction)**		**X**	**X**	**X**
		1.2C1	Assesses the prescription, dosage and adherence to insulin, other injectables, and/or oral diabetes medications (i.e., type, dosage, effect, duration)	X	X	X
		1.2C2	Assesses current medication regimen, other injectables, and/or oral diabetes medications in relation to food intake and timing of administration of medication		X	X
		1.2C3	Assesses current insulin regimen—mealtime and correction insulin dosing factors (eg, insulin to carbohydrate ratios, insulin sensitivity factor, exercise correction)		X	X
		1.2C4	Assesses nutrition-related side effects (including alterations in absorption, metabolism, or excretion of nutrients) of other prescription medications used long term	X	X	X
		1.2C5	Considers the safety and efficacy of over-the-counter medications, herb/dietary supplements	X	X	X
		1.2C6	Assesses, as part of the multidisciplinary team, the need to add or discontinue medications or adjust the dose and timing of medications		X	X
		1.2C7	Evaluates the relationships between prescription, over-the-counter, and other medications and herb/dietary supplements that are being used by the patient/ client; identifies specific medications and herb/dietary supplements that may affect blood glucose level		X	X
		1.2C8	Evaluates overall medication management in the context of integrated disease state management			X
	1.2D	**Evaluates diagnostic tests, biochemical data, diabetes device and equipment use, patient/client records, procedures, evaluations**		**X**	**X**	**X**
		1.2D1	Uses clinical practice recommendations as basis for tests recommended to diagnose diabetes or pre-diabetes (eg, Hemoglobin A1c [HbA1c], oral glucose tolerance test), procedures and evaluations (eg, nationally developed evidenced based diabetes guidelines and standards)	X	X	X
		1.2D2	Evaluates biochemical laboratory data for lipids, glucose, kidney function, other nutrition-related tests, and blood pressure measurements	X	X	X

Figure 2. (Continued)

Indicators for Standard 1: Nutrition Assessment				The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are American Dietetic Association (ADA) Core RD Standards of Practice Indicators)				Generalist	Specialty	Advanced
Each RD:						
		1.2D3	Evaluates blood glucose data and reports (eg, patient/client records and/or electronically generated reports)	X	X	X
		1.2D4	Evaluates selection and use of blood glucose monitoring equipment		X	X
		1.2D5	Evaluates administration technique of insulin, other injectables, and appropriateness of medication delivery device (eg, syringe, pen, or pump), glucagon administration technique, urine or blood ketone testing when appropriate		X	X
		1.2D6	Uses patient/client reported food intake, blood glucose data, and/or diabetes medication records for pattern management evaluation		X	X
		1.2D7	Evaluates insulin pump therapy and CGM data and records (eg, manual review of device settings, and/or electronically generated data reports)		X	X
		1.2D8	Utilizes tests, procedures, and evaluations and incorporates complex decision-making in the context of integrated disease state management			X
	1.2E	**Identifies and assesses diabetes complications (acute and chronic) and risk reduction/prevention**		**X**	**X**	**X**
		1.2E1	Assesses evidence-based indicators of diabetes-related complications (eg, lipids, microalbumin, blood pressure, inflammatory markers)	X	X	X
		1.2E2	Assesses risk of developing acute complications (eg, hypoglycemia, hyperglycemia, diabetic ketoacidosis [DKA])	X	X	X
		1.2E3	Assesses and reviews frequency, severity and consequences of hypoglycemia/hyperglycemia, and prevention/treatment		X	X
		1.2E4	Assesses patient/client understanding of the most common precipitants of DKA (eg, an increased requirement for insulin due to an increased physiologic stress such as seen with an infection, trauma, or omission of normal insulin) and behaviors leading to DKA		X	X
		1.2E5	Assesses actual risk of developing chronic microvascular complications (eg, neuropathy, nephropathy, retinopathy)		X	X
		1.2E6	Assesses risk of developing chronic macrovascular complications (eg, cardiovascular disease)		X	X
		1.2E7	Determines readiness of patient/client for intensifying glycemic control to prevent or reduce the progression of chronic complications as appropriate		X	X
		1.2E8	Assesses preventive care behaviors (eg, foot care, annual influenza immunization, pneumococal immunization, annual dilated eye and dental exams) based on the recommendations of the American Diabetes Association Standards of Medical Care (www.diabetes.org)		X	X
		1.2E9	Directs nutrition management of long-term complications of diabetes within the context of integrated care			X
	1.2F	**Evaluates the patient's/client's physical activity level and identifies activity limitations**		**X**	**X**	**X**
		1.2F1	Evaluates current diabetes treatment plan for appropriate physical activity prescription according to current guidelines	X	X	X
		1.2F2	Assesses physical activity limitations (eg, vision, mobility, dexterity, medication contraindications)	X	X	X
		1.2F3	Assesses ability to perform physical activity in the presence of suboptimal blood glucose control and specific long-term complications of diabetes		X	X

Figure 2. (Continued)

Indicators for Standard 1: Nutrition Assessment				The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are American Dietetic Association (ADA) Core RD Standards of Practice Indicators)				Generalist	Specialty	Advanced
Each RD:						
1.3	**Evaluates psychosocial, socioeconomic, functional, and behavioral factors related to food access, selection, preparation, and understanding of health condition**			**X**	**X**	**X**
	1.3A	**Utilizes validated tools to assess developmental, functional, and mental status, and cultural, ethnic, and lifestyle factors**		**X**	**X**	**X**
		1.3A1	Assesses health literacy and numeracy (eg, ability to read, write, and perform calculations)	X	X	X
		1.3A2	Evaluates nutrition and health knowledge and beliefs	X	X	X
		1.3A3	Explores factors indicating risk of depression	X	X	X
		1.3A4	Assesses risk/history of disordered eating and factors related to risk (eg, medication adjustments/omissions, food issues, physical activity)	X	X	X
		1.3A5	Assesses food access and availability	X	X	X
1.4	**Evaluates patient/client readiness to learn and potential for behavior changes**			**X**	**X**	**X**
	1.4A	Assesses behavioral mediators (or antecedents) related to dietary intake (eg, attitudes, self-efficacy, knowledge, intentions, readiness and willingness to change, perceived social support)		X	X	X
	1.4B	Identifies self-care skills and behaviors		X	X	X
	1.4C	Assesses feelings about living with diabetes and living with chronic disease			X	X
	1.4D	Assesses lifestyle behaviors related to diabetes complications			X	X
1.5	**Compares patient/client data with national standards of diabetes care (HbA1c, blood pressure, lipids)**			**X**	**X**	**X**
1.6	**Identifies possible problem areas for determining nutrition diagnoses**			**X**	**X**	**X**
	1.6A	Assesses more complex issues related to food intake and clinical complications			X	X
	1.6B	Assesses most complex issues related to food intake and clinical complications and their management within the multidisciplinary treatment				X
1.7	**Documents the patient/client assessment:**			**X**	**X**	**X**
	1.7A	**Date and time of assessment**		**X**	**X**	**X**
	1.7B	**Pertinent data and comparison to standards**		**X**	**X**	**X**
	1.7C	**Patient/client current perceptions, values, and motivation related to presenting problems**		**X**	**X**	**X**
	1.7D	**Changes in patient/client perceptions, values, and motivation related to presenting problems**		**X**	**X**	**X**
	1.7E	**Reason for discharge/discontinuation or referral if appropriate**		**X**	**X**	**X**

Examples of Outcomes for Standard 1: Nutrition Assessment

- Appropriate assessment tools and procedures (matching the assessment method to the situation) are implemented
- Assessment tools are applied in valid and reliable ways
- Appropriate data are collected
- Data are validated
- Data are collected, organized and categorized in a meaningful framework that relates to nutrition problems
- Effective interviewing methods are utilized
- Problems that require consultations with or referral to another provider are recognized and addressed
- Documentation and communication of assessment are complete, relevant, accurate, and timely

Figure 2. (Continued)

Standard 2: Nutrition Diagnosis

RDs identify and label specific nutrition problem(s) that the RD is responsible for treating.

Rationale: Nutrition Diagnosis is the second of four steps of the Nutrition Care Process. At the end of the Nutrition Assessment step, data are clustered, analyzed, and synthesized. This will reveal a nutrition diagnosis category from which to formulate a specific nutrition diagnosis statement. There is a difference between a nutrition diagnosis and a medical diagnosis. A nutrition diagnosis changes as the patient/client response changes, whereas a medical diagnosis does not change as long as the disease or condition exists. The nutrition diagnosis(es) demonstrates a link to determining goals for outcomes, selecting appropriate interventions and tracking progress in attaining expected outcomes.

Standard 2: Nutrition Diagnosis			**The "X" signifies the indicators for the level of practice**		
(Bold Font Indicators are ADA Core RD Standards of Practice Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
2.1	**Derives the nutrition diagnosis(es) from the assessment data**		**X**	**X**	**X**
	2.1A	**Identifies and labels the problem**	**X**	**X**	**X**
	2.1B	**Determines etiology (cause/contributing risk factors)**	**X**	**X**	**X**
	2.1C	**Clusters signs and symptoms (defining characteristics)**	**X**	**X**	**X**
2.2	**Ranks (prioritizes) the nutrition diagnosis(es)**		**X**	**X**	**X**
	2.2A	Uses evidence-based protocols and guidelines for diabetes care to prioritize nutrition diagnoses in order of importance or urgency	X	X	X
	2.2B	Uses experience, in addition to protocols and guidelines for diabetes care, to determine nutrition diagnosis hierarchy for disease states and complications		X	X
	2.2C	Prioritizes nutrition diagnoses for disease states and complications as base for protocols and guidelines, using advanced diagnostic reasoning and judgment			X
2.3	**Validates the nutrition diagnosis(es) based on assessment data and input from patient/client, community, family members, and/or other health care professionals when possible and appropriate**		**X**	**X**	**X**
	2.3A	Validates the diagnosis(es) using specialty level clinical judgment skills (eg, selects from a range of possibilities with additional consideration of the prevention of micro- and macrovascular complications)		X	X
	2.3B	Validates the diagnosis(es) using advanced diagnostic reasoning and judgment (ie, reflecting the holistic focus of diabetes as a complex metabolic disorder)			X
2.4	**Documents the nutrition diagnosis(es) using standardized language and written statement(s) that include problem (P), etiology (E) and signs and symptoms (S) (PES statement[s])**		**X**	**X**	**X**
2.5	**Re-evaluates and revises nutrition diagnosis(es) when additional assessment data become available**		**X**	**X**	**X**

Examples of Outcomes for Standard 2: Nutrition Diagnosis

- Nutrition Diagnosis Statements that are:
  - Clear and concise
  - Specific—patient/client or community centered
  - Accurate—relates to etiology
  - Based on reliable and accurate assessment data
  - Includes date and time
- Documentation of nutrition diagnosis(es) is relevant, accurate and timely
- Documentation of nutrition diagnosis(es) is revised and updated as additional assessment data become available

Figure 2. (Continued)

Standard 3: Nutrition Intervention

RDs identify and implement appropriate, purposefully planned actions designed with the intent of changing a nutrition-related behavior, risk factor, environmental condition, or aspect of health status for an individual, target group, or the community at large.

Rationale: Nutrition Intervention is the third of four steps of the Nutrition Care Process. It consists of two interrelated components—planning and implementation. Planning involves prioritizing the nutrition diagnoses, conferring with the patient/client and/or others, reviewing practice guides and policies, and setting goals and defining the specific nutrition intervention strategy. Implementation of the nutrition intervention is the action phase that includes carrying out and communicating the plan of care, continuing data collection, and revising the nutrition intervention strategy, as warranted, based on the patient/client response. The RD performs the interventions or assigns the nutrition care that others provide in accordance with federal, state, and local laws and regulations.

Standard 3: Nutrition Intervention			**The "X" signifies the indicators for the level of practice**		
(Bold Font Indicators are ADA Core RD Standards of Practice Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
Plans the nutrition intervention:					
3.1	**Prioritizes the nutrition diagnosis based on problem severity, safety, patient/client needs, likelihood that nutrition intervention will impact problem and patient/client perception of importance**		**X**	**X**	**X**
Prioritization considerations may include:					
	3.1A	Survival skills (eg, glycemic response to macronutrients, meal timing, self-blood glucose monitoring, action of medication[s], and treatment of hypoglycemia)	X	X	X
	3.1B	DSME/DSMT needs (eg, AADE7 Behaviors, National DSME Standards)	X	X	X
	3.1C	Comorbid diseases or conditions (eg, obesity, CHF, hypertension, dyslipidemia, depression, kidney disease, COPD, eating disorders)	X	X	X
	3.1D	Actual or risk for acute complications (eg, hypoglycemia, hyperglycemia, and diabetic ketoacidosis)	X	X	X
	3.1E	Actual or risk of micro- and macrovascular complications	X	X	X
	3.1F	Appropriateness of patient/client for intensive glycemic control to prevent or reduce the progression of chronic complications based on comorbidities		X	X
3.2	**Selects specific intervention plan based on best available evidence (eg, national guidelines [American Diabetes Association Standards of Medical Care], published research, evidence-based libraries [ADA Evidence Analysis Library] and databases)**		**X**	**X**	**X**
	3.2A	Evaluates and selects appropriate guidelines		X	X
	3.2B	Adjusts guidelines/protocols based on the individual and progress of intervention		X	X
	3.2C	Recognizes when it is appropriate and safe to deviate from established guidelines			X
3.3	**Considers institutional program policies and protocols when selecting an intervention plan**		**X**	**X**	**X**
3.4	**Discusses intervention plan with patient/client and caregivers, as appropriate**		**X**	**X**	**X**
3.5	**Determines patient/client-focused goals and expected outcomes**		**X**	**X**	**X**
	3.5A	Develops expected goals and outcomes with the patient/client in observable and measurable terms that are clear and concise	X	X	X
	3.5B	Develops patient/client-centered goals and outcomes tailored to what is reasonable to the patient/client's circumstances	X	X	X

Figure 2. (Continued)

Standard 3: Nutrition Intervention				The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Practice Indicators)				**Generalist**	**Specialty**	**Advanced**
Each RD:						
Plans the nutrition intervention:						
3.6	**Details the diabetes self-care plan including the nutrition prescription**			**X**	**X**	**X**
	3.6A	Reviews diabetes meal-planning approach and develops or adjusts individualized diabetes meal plan as indicated		X	X	X
	3.6B	Defines pharmacotherapy intervention plan		X	X	X
		3.6B1	Reviews insulin, incretins, and oral diabetes medications (eg, effect on blood glucose level)	X	X	X
		3.6B2	Recommends the initiation of pharmacotherapy. (May include calculation of insulin-to-carbohydrate ratios [ICR]; calculating and explaining insulin sensitivity factor [ISF]; use and application of ISF; intensification of medication management based on progression of the disease.)		X	X
		3.6B3	Recommends adjustments to pharmacotherapy, based on integration of nutrition, physical activity, medication, blood glucose and/or CGM data, and physical exam data. (May include adjustment of ICR and ISF; intensification of medication management based on progression of the disease.)		X	X
		3.6B4	Provides instruction on medication delivery systems, which may include insulin or incretins (eg, syringes, pens, insulin pump); stability, storage and compatibility; reducing risk of blood-borne pathogens and sharps' disposal.		X	X
		3.6B5	Implements pharmacotherapy plan, including adjustments, using provider-approved protocols consistent with facility policies. Uses advanced judgment and reasoning, integrating nutrition, physical activity, medication, blood glucose and/or CGM data, and physical exam data			X
		3.6B6	Discusses complementary and alternative treatment strategies when medically appropriate			X
	3.6C	Discusses acute complications such as treatment of hyper- and hypoglycemia		X	X	X
		3.6C1	Reviews basic information and provides instruction on prevention and treatment for hyper- and hypoglycemia; reviews laboratory test results (eg, HbA1c, lipids) and provides instruction on relevance to treatment	X	X	X
		3.6C2	Provides instruction on treatment of severe hypoglycemia to include administration of glucagon		X	X
	3.6D	Discusses sick-day guidelines		X	X	X
		3.6D1	Provides information for sick-day guidelines beyond food intake (eg, medication adjustment, urine or blood ketone testing, adequate hydration)		X	X
	3.6E	Discusses glucose monitoring data		X	X	X
		3.6E1	Provides recommendation to health care provider that adjustment in medication is needed based on analysis of glucose monitoring data	X	X	X
		3.6E2	Provides instruction on glucose data in relation to food intake and makes recommendations for adjustments in food plan and/or diabetes medications		X	X
		3.6E3	Provides instruction on glucose data in relation to physical activity and makes recommendations in food plan and/or diabetes medications		X	X
		3.6E4	Plans and reviews selection and initiation of glucose monitoring equipment (eg, blood glucose meters, continuous glucose monitoring systems, sensor-augmented pumps)		X	X
		3.6E5	Provide instruction on basic trending of glucose; how to use personal data management tools for review and interpreting glucose patterns (home use)			X

Figure 2. (Continued)

Standard 3: Nutrition Intervention				The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Practice Indicators)				**Generalist**	**Specialty**	**Advanced**
Each RD:						
Plans the nutrition intervention:						
	3.6F	Discusses reducing risk of chronic complications		X	X	X
		3.6F1	Discusses reduction of chronic complications, including, but not limited to, foot exam, blood pressure and lipid control, annual eye and dental examinations	X	X	X
		3.6F2	Reviews components of comprehensive foot care that include the following: awareness of personal risk factors, importance of at least annual inspection of feet by a health care professional, daily self-inspection of feet, proper nail and skin care, injury prevention, and when to seek help or specialized referral		X	X
	3.6G	Integrates psychological and behavioral factors into the nutrition prescription		X	X	X
3.7	**Defines frequency of care and expected duration needed for intervention**			**X**	**X**	**X**
	3.7A	Determines intensity of change and uses to determine duration and follow-up			X	X
3.8	**Utilizes standardized language for describing interventions**			**X**	**X**	**X**
3.9	Evaluates patient/client readiness to learn, and potential for behavior changes			X	X	X
	3.9A	**Identifies resources to assist patient/client with diabetes (eg, using health care and diabetes education services, support groups, and community programs appropriately)**		**X**	**X**	**X**
	3.9B	**Recommends referrals to programs and/or providers (eg, behavioral health, ophthalmologist, podiatrist, and dentist) as appropriate**		**X**	**X**	**X**
Implements the Nutrition Intervention:						
3.10	**Collaborates with health care colleagues outside of the diabetes care team to ensure quality of care for the patient/client (eg, weight management, heart disease, cystic fibrosis, renal disease, eating disorders)**			**X**	**X**	**X**
	3.10A	Facilitates and fosters active communication, learning, partnerships, and collaboration with the diabetes team			X	X
3.11	**Communicates the plan of care to referring providers and others as needed**			**X**	**X**	**X**
3.12	**Initiates the plan of care with the patient/client**			**X**	**X**	**X**
	3.12A	Addresses topics with patient/client/family/support person as outlined in the nutrition prescription (eg, meal planning approach, pharmacotherapy intervention, acute and chronic complications, risk of chronic complications, sick-day guidelines, glucose monitoring data)		X	X	X
	3.12B	Utilizes appropriate behavior change theories (eg, motivational interviewing, behavior modification, modeling) to facilitate self management self-care strategies		X	X	X
	3.12C	Uses critical thinking and synthesis skills to guide decision-making in complicated, unpredictable, and dynamic situations			X	X
3.13	**Continues data collection and modifies the plan of care as needed**			X	X	X
	3.13A	Conducts comprehensive analysis of data trends to modify the plan of care, as indicated			X	X
	3.13B	Develops policies for data analysis				X

Figure 2. (Continued)

Standard 3: Nutrition Intervention			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Practice Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
Implements the Nutrition Intervention:					
3.14	**Individualizes nutrition intervention**		**X**	**X**	**X**
	3.14A	Uses interpersonal, teaching, coaching, counseling, health literacy, and numeracy resources and/or technological approaches as appropriate	X	X	X
	3.14B	Uses critical thinking synthesis skills for combining multiple intervention approaches as appropriate		X	X
	3.14C	Draws on experiential knowledge and current body of advanced knowledge about the patient/client population to individualize the strategy for complex interventions			X
3.15	**Follows up and verifies that nutrition intervention is occurring and needs are being met**		**X**	**X**	**X**
3.16	**Adjusts nutrition intervention strategies, when appropriate**		**X**	**X**	**X**
	3.16A	Makes adjustments in complicated situations using critical thinking and synthesis skills to guide decision-making (eg, glycemic variability or comorbidities)		X	X
3.17	**Documents:**		**X**	**X**	**X**
	3.17A	**Date, time of day, duration and type (ie, individual or group) of intervention**	**X**	**X**	**X**
	3.17B	**Treatment goals and expected outcomes**	**X**	**X**	**X**
	3.17C	**Recommended interventions**	**X**	**X**	**X**
	3.17D	**Adjustments to the plan and justification**	**X**	**X**	**X**
	3.17E	**Patient/client receptivity, barriers, and comprehension**	**X**	**X**	**X**
	3.17F	Educational material(s) provided	X	X	X
	3.17G	**Referrals made and resources used**	**X**	**X**	**X**
	3.17H	**Other information relevant to providing care and monitoring progress over time**	**X**	**X**	**X**
	3.17I	**Plans for follow up and frequency of care**	**X**	**X**	**X**
	3.17J	**Documents reason for discharge/discontinuation or referral as appropriate**	**X**	**X**	**X**

Examples of Outcomes for Standard 3: Nutrition Intervention

- Appropriate prioritizing and setting of goals/expected outcomes
- Appropriate nutrition plan or prescription is developed
- Interdisciplinary connections are established
- Nutrition interventions are delivered and actions are carried out
- Documentation of nutrition intervention is:
  - Comprehensive
  - Specific
  - Accurate
  - Relevant
  - Timely
  - Dated and timed
- Documentation of nutrition intervention is revised and updated

Figure 2. (Continued)

Standard 4: Nutrition Monitoring and Evaluation

RDs monitor and evaluate indicators and outcomes data directly related to the nutrition diagnosis, goals and intervention strategies to determine the progress made in achieving desired outcomes of nutrition care and whether planned interventions should be continued or revised.

Rationale: Nutrition monitoring and evaluation is the fourth step in the Nutrition Care Process. Through monitoring and evaluation the RD identifies important measures of change or patient/client outcomes relevant to the nutrition diagnosis and nutrition intervention and describes how best to measure these outcomes. The aim is to promote uniformity within the profession in evaluating the efficacy of nutrition interventions. In addition, an outcomes management system might be implemented.

Standard 4: Nutrition Monitoring and Evaluation				**The "X" signifies the indicators for the level of practice**		
(Bold Font Indicators are ADA Core RD Standards of Practice Indicators)				**Generalist**	**Specialty**	**Advanced**
Each RD:						
4.1	**Monitors progress:**			**X**	**X**	**X**
	4.1A	**Evaluates patient/client understanding and adherence with nutrition intervention**		**X**	**X**	**X**
	4.1B	**Determines whether the intervention is being implemented according to prescription and/or identifies barriers to change**		**X**	**X**	**X**
	4.1C	**Provides evidence that the nutrition intervention is or is not changing the patient/client behavior or health condition(s)**		**X**	**X**	**X**
	4.1D	**Identifies positive or negative outcomes (eg, changes in HbA1c, blood pressure, lipids, weight)**		**X**	**X**	**X**
	4.1E	**Obtains information to indicate progress or reasons for lack of progress**		**X**	**X**	**X**
		4.1E1	Elicits feedback from patient/client about success with behavior change (eg, food and physical activity)	X	X	X
		4.1E2	Elicits feedback from patient/client about success/challenges with behavior change (eg, monitoring, taking medications, problem solving, healthy coping, reducing risk)		X	X
		4.1E3	Adjusts plan with patient/client to overcome obstacles to change	X	X	X
	4.1F	**Supports conclusions with evidence**		**X**	**X**	**X**
4.2	**Measures outcomes:**			**X**	**X**	**X**
	4.2A	**Selects standardized nutrition care outcome indicator(s) to measure (eg, weight, HbA1c, lipids, blood pressure, food/activity records)**		**X**	**X**	**X**
	4.2B	**Uses standardized nutrition care outcome indicator(s)**		**X**	**X**	**X**

Figure 2. (Continued)

Standard 4: Nutrition Monitoring and Evaluation			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Practice Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
4.3	**Evaluates outcomes:**		**X**	**X**	**X**
	4.3A	**Compares monitoring data with nutrition prescription/goals or reference standard**	**X**	**X**	**X**
	4.3B	**Evaluates impact of the sum of all interventions on overall patient/client health outcomes**	**X**	**X**	**X**
	4.3C	Completes a comprehensive analysis of the indicators for each identified problem area using specialty level clinical judgment skills		X	X
	4.3D	Completes a detailed analysis and trending of the indicators to evaluate the complexity of problems and correlates one problem to another using advanced clinical judgment skills			X
4.4	**Documents:**		**X**	**X**	**X**
	4.4A	**Date and time**	**X**	**X**	**X**
	4.4B	**Indicators measured, results, and the method for obtaining measurement (eg, HbA1c, lipids, weight)**	**X**	**X**	**X**
	4.4C	**Criteria to which the indicator is compared (eg, nutrition prescription/goal or a reference standard)**	**X**	**X**	**X**
	4.4D	**Factors facilitating or hampering progress**	**X**	**X**	**X**
	4.4E	**Other positive or negative outcomes**	**X**	**X**	**X**
	4.4F	**Future plans for nutrition care, nutrition monitoring, follow up, and referral or discharge**	**X**	**X**	**X**

Examples of Outcomes for Standard 4: Nutrition Monitoring and Evaluation

- The patient/client/community outcome(s) directly relate to the nutrition diagnosis and the goals established in the intervention plan. Examples include but are not limited to:
  - Nutrition outcomes (eg, change in knowledge, behavior, food or nutrient intake)
  - Clinical and health status outcomes (eg, change in laboratory values, body weight, blood pressure, risk factors, signs and symptoms, clinical status, infections, complications)
  - Patient/client-centered outcomes (eg, quality of life, satisfaction, self-efficacy, self-management, functional ability)
  - Health care utilization and cost effectiveness outcomes (eg, change in medication, special procedures, planned/unplanned clinic visits, preventable hospital admissions, length of hospitalizations, prevented or delayed nursing home admissions)
- Documentation of nutrition monitoring and evaluation is:
  - Comprehensive
  - Specific
  - Accurate
  - Relevant
  - Timely
  - Dated and timed

Figure 2. (Continued)

Standard 1: Provision of Services

Registered dietitians (RDs) provide quality service based on customer expectations and needs.

Rationale: Quality service is provided, facilitated and promoted based on the RD's knowledge, experience and understanding of patient/client needs and expectations.

Indicators for Standard 1: Provision of Services			**The "X" signifies the indicators for the level of practice**		
(Bold Font Indicators are American Dietetic Association (ADA) Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
1.1	**Provides input and is active in the development of diabetes screening parameters**		**X**	**X**	**X**
	1.1A	Complies with standards of diabetes care based on evidence-based guidelines and recommendations	X	X	X
	1.1B	Identifies diabetes screening tools	X	X	X
	1.1C	Develops diabetes screening tools		X	X
	1.1D	Serves as team leader, utilizing expert knowledge and critical thinking skills, to develop, implement, review, and revise, as applicable, the diabetes screening tool/process as needed			X
1.2	**Reviews and participates in collecting data to test the efficiency and effectiveness of the diabetes screening process related to practice area (eg, clinical, public health, home health)**		**X**	**X**	**X**
	1.2A	Audits diabetes screening processes for efficiency and effectiveness		X	X
	1.2B	Analyzes, documents and reports data from diabetes screening audits		X	X
	1.2C	Revises (or adjusts) diabetes screening processes as indicated by results of data collection		X	X
1.3	**Contributes to the development of a referral process to ensure that the public has an identifiable method of being linked to an RD who will ultimately provide services**		**X**	**X**	**X**
	1.3A	Receives referrals for services from and recommends referrals to other health care professionals	X	X	X
	1.3B	Tracks data to evaluate the effectiveness of diabetes referral process and systems	X	X	X
	1.3C	Evaluates referral process, utilizing expert knowledge and critical-thinking skills		X	X
	1.3D	Serves as team leader to direct and manage referral processes and systems, using a quality-improvement process		X	X
1.4	**Collaborates with patient/client to assess needs, background, and resources in order to set priorities, establish goals, and create individualized action plans**		**X**	**X**	**X**
	1.4A	Understands behavior change and counseling theories and is able to apply theories in practice where appropriate	X	X	X
	1.4B	Demonstrates leadership in utilizing, evaluating and communicating success in using different theoretical frameworks for intervention (eg, health belief model; social cognitive theory/social learning theory; stages of change [Transtheoretical Theory]; Enabling/Access Enhancing [PRECEDE model]; Fishbein/Ajzen [theory of reasoned action])		X	X
	1.4C	Establishes systematic process to identify, track, and update available resources for patients/clients		X	X
	1.4D	Directs and manages systematic processes to identify, track, and monitor utilization of patient/client resources			X

Figure 3. American Dietetic Association Revised Standards of Professional Performance for Registered Dietitians (Generalist, Specialty, and Advanced) in Diabetes Care.

Indicators for Standard 1: Provision of Services			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are American Dietetic Association (ADA) Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
1.5	**Involves patients/clients and their families in decision-making when appropriate**		**X**	**X**	**X**
	1.5A	Designs diabetes medical nutrition therapy (MNT) plan according to the patient/client's needs, with consideration and input from caregivers and other health care providers when appropriate	X	X	X
	1.5B	Guides and teaches patients/clients and their support network in health care decision-making and goal-setting to positively maximize interventions and outcome measures	X	X	X
1.6	**Recognizes the influence that culture, health literacy and numeracy, and socioeconomic status have on health and illness experiences and identifies the patient/client's use of health care services**		**X**	**X**	**X**
	1.6A	Adapts practice to meet the needs of culturally-diverse (race, ethnicity, age) populations	X	X	X
	1.6B	Connects patients/clients/families/support network with established resources and services within their specific ethnic/cultural community	X	X	X
	1.6C	Searches for additional resources to positively influence diabetes nutrition outcomes within the patient/client's specific ethnic/cultural community, and collaborates as appropriate	X	X	X
1.7	**Applies knowledge and principles of disease prevention and behavioral change appropriate for culturally-diverse populations**		**X**	**X**	**X**
1.8	**Collaborates and coordinates with other professionals as appropriate**		**X**	**X**	**X**
	1.8A	Works within the multidisciplinary team to provide education, services, and/or programs	X	X	X
	1.8B	Documents and reports, in partnership with health care provider and care system, referral sources for treatment, care, services, and education	X	X	X
	1.8C	Serves in consultant role for medical management of diabetes and comorbidities		X	X
	1.8D	Plans and develops larger population-based and specialty-focused health promotion/prevention programs based on client needs, culture, evidence-based strategies, and available resources		X	X
	1.8E	Plans, develops, and facilitates implementation of systems of diabetes nutrition care and services (eg, chronic care model)		X	X
1.9	**Applies knowledge and skills to determine appropriate diabetes self-management care plans**		**X**	**X**	**X**
	1.9A	Applies general diabetes knowledge and skills	X	X	X
	1.9B	Applies knowledge and skills at the specialty level (ie, functional working knowledge of specialty area demonstrated by an understanding and use of the general principles, theories, and practices pertinent to the diabetes specialty) to determine the most appropriate action plan		X	X
	1.9C	Applies knowledge and skills at the advanced practice level (i.e., advanced and comprehensive knowledge of diabetes care demonstrated by a thorough understanding and use of advanced diabetes self-care management principles, theories, and practices pertinent to diabetes care) to determine the most appropriate action plan			X

Figure 3. (Continued)

Indicators for Standard 1: Provision of Services			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are American Dietetic Association (ADA) Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
1.10	**Implements quality practice by following policies, procedures, legislation, licensure, credentialing, competency, regulatory requirements, and practice guidelines**		**X**	**X**	**X**
	1.10A	Participates in collection and documentation of nationally standardized and consensus-based diabetes performance measures (eg, National Committee for Quality Assurance [NCQA], American Association of Clinical Endocrinologists [AACE], American Diabetes Association)	X	X	X
	1.10B	Participates as a committee member in the development and updating of policies and procedures and evidence-based practice tools		X	X
	1.10C	Develops implementation strategies for quality improvement tailored to the needs of the organization and their client populations (eg, identification/adaptation of evidence-based practice guidelines/protocols, skills training/reinforcement; organizational incentives and supports)		X	X
	1.10D	Develops and manages diabetes education program in compliance with national standards for diabetes self-management education (DSME) and diabetes self-management training (DSMT) and American Diabetes Association Education Recognition Program and/or the American Association of Diabetes Educators (AADE) Diabetes Education Accreditation Program		X	X
	1.10E	Develops diabetes specific community/prevention programs incorporating behavior change theory, self-concept, lifestyle functions, and systematic evaluation of learning		X	X
	1.10F	Leads process of developing, monitoring, evaluating, and improving the use of DSME and DSMT protocols/guidelines/practice tools			X
1.11	**Advocates for the provision of nutrition care as part of public policy for diabetes prevention and DSME/DSMT and MNT**		**X**	**X**	**X**
	1.11A	Participates in the process of patient/client diabetes advocacy activities (eg, community diabetes screenings, local American Diabetes Association and Juvenile Diabetes Research Foundation [JDRF] events, National Diabetes Education Program [NDEP])	X	X	X
	1.11B	Advocates for health promotion at the policy level and promotes health-related public policy by participating in legislative and policy-making activities that influence health services and practices	X	X	X
	1.11C	Assesses patient/client population for situations where diabetes advocacy is needed (eg, local, state and national diabetes coalitions or collaborations)		X	X
	1.11D	Takes leadership role and initiates advocacy activities/issues; authors articles and delivers presentations on topic; networks with other interested parties		X	X
1.12	**Maintains records/documentation of services provided**		**X**	**X**	**X**
	1.12A	Organizes records for retrospective data analysis and prepares reports (eg, American Diabetes Association Education Recognition Program or AADE Diabetes Education Accreditation Program)		X	X

Figure 3. (Continued)

Indicators for Standard 1: Provision of Services			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are American Dietetic Association (ADA) Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
1.13	**Develops diabetes care protocols and policies for diverse populations**		**X**	**X**	**X**
	1.13A	Utilizes evidence-based guidelines, best practices, and national and international guidelines in the delivery of diabetes nutrition services	X	X	X
	1.13B	Develops diabetes nutrition programs, protocols, and policies based on evidence-based guidelines, best practices, trends, and national and international guidelines		X	X
	1.13C	Participates in the development of institutional pharmacotherapy protocols for diabetes care			X
	1.13D	Directs the development of diabetes nutrition programs, protocols, and policies based on evidence-based guidelines, best practices, trends, and national and international guidelines			X
1.14	**Participates in food/formulary delivery systems in terms of the nutrition status, health and well-being of diabetes populations**		**X**	**X**	**X**
	1.14A	Collects data and offers feedback on current food/formula delivery systems in health care and community settings, (eg, inpatient and ambulatory care settings, nursing homes, senior centers, home delivery)	X	X	X
	1.14B	Collaborates in the design, evaluation, and/or revision of food/formulary delivery systems in health care and community settings (eg, inpatient and ambulatory care settings, nursing homes, senior centers, home delivery)		X	X
	1.14C	Initiates the design, evaluation, and/or revision of food/formulary delivery systems in health care and community settings (eg, inpatient and ambulatory care settings, nursing homes, senior centers, home delivery)			X
	1.14D	Provides guidance regarding enteral, supplements/feedings, Total Parenteral Nutrition, in accordance with best practice for diabetes care (eg, ADA, American Society for Parenteral and Enteral Nutrition)		X	X

Examples of Outcomes for Standard 1: Provision of Services

- Patients/clients participates in establishing goals
- Patients/clients needs are met
- Patients/clients are satisfied with services and products
- Evaluations reflect expected outcomes
- Effective screening and referral services are established
- Patients/clients have access to food assistance
- Patients/clients have access to nutrition services

Figure 3. (Continued)

Standard 2: Application of Research

RDs apply, participate in, or generate research to enhance practice.

Rationale: Application, participation, and generation of research promotes improved safety and quality of dietetic practice and services.

Indicators for Standard 2: Application of Research			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
2.1	**Reviews best available research findings for application to practice of diabetes care**		**X**	**X**	**X**
	2.1A	Demonstrates understanding of research design and methodology		X	X
	2.1B	Demonstrates understanding of study outcomes and how to interpret and apply results to clinical practice		X	X
	2.1C	Identifies key clinical and management questions and utilizes systematic methods to extract evidence-based research to answer questions			X
	2.1D	Encourages the use of evidence-based tools as a basis for stimulating awareness and integration of current evidence		X	X
	2.1E	Functions as an author/co-author or co-investigator of research and organizational position papers		X	X
	2.1F	Functions as a primary or senior author or principal investigator of research and organizational position papers			X
2.2	**Bases practice on sound scientific principles, best available research, and theory, and/or expert consensus**		**X**	**X**	**X**
	2.2A	Demonstrates adherence to evidence-based practice and considers the best available research on nutrition related prevention and treatment of diabetes to promote consistency in practice	X	X	X
	2.2B	Systematically reviews the available scientific literature in situations where evidence-based practice guidelines for diabetes nutritional care do not exist		X	X
	2.2C	Critically evaluates the best available research reflecting complex disease processes, and efficiently applies this research to clinical practice		X	X
	2.2D	Participates in the development of evidence-based guidelines for use in diabetes clinical practice			X
2.3	**Integrates best available research with clinical/managerial expertise and client values (evidence-based practice)**		**X**	**X**	**X**
2.4	**Promotes research through alliances and collaboration with other dietetics professionals and organizations**		**X**	**X**	**X**
	2.4A	Facilitates or participates in studies related to diabetes care	X	X	X
	2.4B	Identifies research issues/questions		X	X
	2.4C	Designs and leads studies related to diabetes care			X
	2.4D	Collaborates with multidisciplinary and/or inter-organizational team to perform and disseminate diabetes research			X
	2.4E	Leads multidisciplinary and/or inter-organizational research activities efforts, related to diabetes care			X

Figure 3. (Continued)

Indicators for Standard 2: Application of Research			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
2.5	**Contributes to the development of new knowledge and research in dietetics**		**X**	**X**	**X**
	2.5A	Participates in practice based research networks (ie, ADA's Dietetics Practice Based Research Network [DPBRN]; ADA's Evidence Analysis Library)		X	X
	2.5B	Identifies and initiates research relevant to diabetes practice as the principal or co-investigator or as a collaborator with other members of the health care team or community			X
	2.5C	Serves as a principal or co-investigator in collaborative research teams that examine relationships related to nutrition and diabetes care			X
2.6	**Collects measurable data and documents outcomes within practice setting**		**X**	**X**	**X**
	2.6A	Develops and/or utilizes systematic processes to collect and analyze diabetes related data		X	X
	2.6B	Monitors and evaluates pooled/aggregate data against expected outcomes		X	X
	2.6C	Utilizes collected data as part of a quality improvement process to improve diabetes outcomes and quality of care		X	X
	2.6D	Directs integration of diabetes research data into publications and presentations			X
2.7	**Communicates research data and activities through publications and presentations**		**X**	**X**	**X**
	2.7A	Presents information on evidence-based diabetes guidelines and research at the local level (eg, community groups, colleagues)	X	X	X
	2.7B	Presents at local and regional professional or consumer meetings		X	X
	2.7C	Serves in leadership role for program planning of local, state, and regional meetings and for diabetes-related publications		X	X
	2.7D	Presents at national and international professional or consumer meetings and serves as lead author on diabetes-related research in peer-reviewed publications			X
	2.7E	Serves in a leadership role for program planning of national and international research oriented meetings and related publications			X

Examples of Outcomes for Standard 2: Application of Research

- Patient/client receives appropriate services based on the effective application of best evidence
- A foundation for performance measurement and improvement is established
- Best evidence is used for the development and revision of resources used in practice
- Benchmarking and knowledge of best practices is used to evaluate and improve performance

Figure 3. (Continued)

Standard 3: Communication and Application of Knowledge

RDs effectively apply knowledge and communicate with others.

Rationale: RDs work with and through others to achieve common goals by effective sharing and application of their unique knowledge and skills in food, human nutrition, and management services.

Standard 3: Communication and Application of Knowledge			**The "X" signifies the indicators for the level of practice**		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
3.1	**Exhibits knowledge related to diabetes care and education**		**X**	**X**	**X**
	3.1A	Reviews diabetes care and education publications and applies current knowledge to practice	X	X	X
	3.1B	Interprets public health trends (eg, prevalence, prevention, and treatment) and epidemiological data and applies to professional practice/organization		X	X
	3.1C	Interprets regulatory, accreditation, and reimbursement programs and standards for institutions and providers that are specific to diabetes care and education (eg, Centers for Medicare & Medicaid Services [CMS], The Joint Commission, NCQA, American Diabetes Association)		X	X
	3.1D	Contributes to the body of knowledge for the profession (eg, research, presentation, publication)		X	X
	3.1E	Acts as an expert reference for other health care providers, the community, and outside agencies related to diabetes care			X
3.2	**Communicates sound scientific principles, research, and theoretical concepts**		**X**	**X**	**X**
	3.2A	Demonstrates critical thinking, reflection, and problem-solving skills at the specialty level (eg, selects appropriate information and best method or format for presenting it in writing or verbally) when communicating information		X	X
	3.2B	Demonstrates critical thinking, reflection, and problem-solving skills at the advanced level (eg, able to convey more than mere procedural understanding) when communicating information			X
3.3	**Selects appropriate information and best method or format for presenting in writing or verbally when communicating information**		**X**	**X**	**X**
3.4	**Integrates knowledge of food, nutrition, and metabolism with knowledge of health, social sciences, communication, and management theory**		**X**	**X**	**X**
3.5	**Shares knowledge and information with patients/clients, colleagues, and the public**		**X**	**X**	**X**
	3.5A	Authors articles for consumers and other health care providers	X	X	X
	3.5B	Participates as an invited reviewer, author, and presenter at local, regional, and national meetings and media outlets		X	X
	3.5C	Serves in leadership role for local and national organizations, as well as for publications (ie, editor, editorial advisory board) and on program planning committees		X	X
	3.5D	Serves as national and international diabetes media spokesperson			X
	3.5E	Functions as a key opinion leader/serves as consultant to business, industry, and national diabetes organizations regarding continuing education needs of consumers and health care professionals			X

Figure 3. (Continued)

Standard 3: Communication and Application of Knowledge			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
3.6	**Guides students, interns, peers, and others in the application of knowledge and skills**		**X**	**X**	**X**
	3.6A	Contributes to the educational and professional development of RDs, students, and health care professionals in other fields, through formal and informal teaching activities, preceptorship, and mentorship		X	X
	3.6B	Fulfills teaching or faculty role for education programs for physicians and other health care professionals in pursuit of nutrition-related fellowships, training, and/or certification			X
3.7	**Seeks current and relevant information to provide effective services**		**X**	**X**	**X**
	3.7A	Participates in, utilizes, and/or leads electronic professional networking groups to stay current in diabetes nutrition practice (eg, ADA's Diabetes Care and Education [DCE] DPG listserv, My AADE Network)	X	X	X
	3.7B	Applies research for the development of diabetes protocols and/or guidelines for clinical practice and/or the organization		X	X
	3.7C	Negotiates and/or establishes privileges at systems level for new advances in practice			X
3.8	**Contributes to the development and dissemination of new knowledge**		**X**	**X**	**X**
	3.8A	Initiates and/or serves on planning committees/task forces to develop continuing education programs	X	X	X
	3.8B	Uses clinical exemplars to generate new knowledge and develop new guidelines, programs, and policies in the advanced diabetes practice area			X
	3.8C	Promotes dissemination of information about the evolving roles of the advanced level practitioner (eg, initiating/titrating medications based on provider-approved protocols)			X
3.9	**Uses information technology to communicate, manage knowledge, and support decision-making**		**X**	**X**	**X**
	3.9A	Utilizes and/or participates in the development/revision of electronic health records	X	X	X
	3.9B	Identifies and/or develops Web-based diabetes nutrition tools/resources		X	X
	3.9C	Seeks opportunities to contribute expertise to national bioinformatics/medical informatics projects as applicable/requested			X
3.10	**Contributes to the multidisciplinary approach by promoting strategies that impact health and quality-of-life outcomes of target populations**		**X**	**X**	**X**
	3.10A	Consults with health care providers and others (eg, public health officials or agencies, home health providers, case managers, community health workers, and school personnel) on clinical and other health-related issues	X	X	X
3.11	**Serves as the diabetes nutrition expert within the multidisciplinary health care or management team**		**X**	**X**	**X**
	3.11A	Educates members of multidisciplinary teams in the clinical or community setting regarding the specialized knowledge and demonstrated skills of the specialty and advanced level practitioner		X	X

Examples of Outcomes for Standard 3: Communication and Application of Knowledge

- Expertise in food, nutrition and management is shared
- Individuals and groups:
  - Receive current and appropriate information
  - Understand information received
  - Know how to obtain additional guidance

Figure 3. (Continued)

Standard 4: Utilization and Management of Resources

RDs use resources effectively and efficiently.

Rationale: Mindful management of time, money, facilities, staff, and other resources demonstrates organizational citizenship.

Standard 4: Utilization and Management of Resources			**The "X" signifies the indicators for the level of practice**		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
4.1	**Uses a systematic approach to maintain and manage professional resources**		**X**	**X**	**X**
4.2	**Manages resources (eg, personnel, monies, equipment, and time)**		**X**	**X**	**X**
	4.2A	Participates in operational planning of diabetes programs (ie, staffing, marketing, budgeting, billing, program planning)	X	X	X
	4.2B	Coordinates efficient delivery of diabetes and other related programs, including marketing, billing, coding, and revenue generation and reimbursement trends		X	X
	4.2C	Designs and evaluates marketing strategies for RD services; collects and utilizes benchmarking data for staffing resources		X	X
	4.2D	Leads in business and strategic planning at the institutional diabetes program level			X
4.3	**Participates in analyzing safety, effectiveness, and cost in planning and delivering services and products**		**X**	**X**	**X**
	4.3A	Demonstrates understanding of and complies with the Joint Commission standards (www.jointcommission.org), the National Standards for DSME and the American Diabetes Association Standards of Medical Care, and those of other accreditation bodies	X	X	X
	4.3B	Participates in the evaluation, selection, and implementation (if applicable), of new products and equipment to assure safe, optimal, and cost-effective delivery of diabetes nutrition therapy at the systems level		X	X
	4.3C	Advocates for staffing that supports client population and census		X	X
	4.3D	Designs, promotes and seeks executive commitment to a new service that will meet corporate or institutional goals for diabetes care (eg, provider-approved protocols to initiate/titrate medications)		X	X
	4.3E	Analyzes, at the systems level, safety, effectiveness, planning costs, and delivery of services and products		X	X
	4.3F	Leads development of relevant programs, services, and products			X

Figure 3. (Continued)

Standard 4: Utilization and Management of Resources			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
4.4	**Participates in continuous quality improvement and documents outcomes relative to resource management and/or delivery of services**		**X**	**X**	**X**
	4.4A	Proactively and systematically recognizes needs, anticipates outcomes and consequences of various approaches and modifies resource management and/or delivery of services as necessary to achieve desired outcomes		X	X
	4.4B	Uses appropriate data collection tools to collect, document, analyze, and share outcomes data		X	X
	4.4C	Leads the development, testing, implementation, and evaluation of new tools, as applicable			X
4.5	**Advises patients/clients and others on appropriate and available resources and services**		**X**	**X**	**X**
	4.5A	Identifies, directs, and guides consumers to appropriate diabetes nutrition information	X	X	X
	4.5B	Participates in programs that deliver cost effective treatment with improved metabolic outcomes (eg, diabetes prevention, reduction of diabetes complications, and improved quality of life)	X	X	X
	4.5C	Provides guidance to consumers regarding participation in diabetes-related clinical research studies		X	X
	4.5D	Exercises leadership to achieve desired outcomes using influence gained through advanced competence to identify and secure appropriate and available resources and services			X
4.6	Actively promotes the inclusion of DSME/DSMT and MNT service components in local, regional, and/or national diabetes data registries		X	X	X
	4.6A	Assures that data on RD service providers are captured in databases	X	X	X
	4.6B	Analyzes and utilizes information for long-range strategic planning (eg, program and service efficacy)		X	X

Examples of Outcomes for Standard 4: Utilization and Management of Resources

- Documentation of resource use is consistent with plan
- Data are used to promote and validate services
- Desired outcomes are achieved and documented
- Resources are effectively and efficiently managed

Figure 3. (Continued)

Standard 5: Quality in Practice

RDs systematically evaluate the quality of services and improve practice based on evaluation results.

Rationale: Quality practice requires regular performance evaluation and continuous improvement.

Indicators for Standard 5: Quality in Practice			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
5.1	**Complies with federal, state and local laws and regulations (eg, CMS, Health Insurance Portability Accountability Act [HIPAA])**		**X**	**X**	**X**
	5.1A	Interacts and serves as a resource with legislators, payers, and policy makers to contribute and influence diabetes care		X	X
	5.1B	Leads advocacy efforts/initiatives for policy/legislation to benefit population with diabetes or at risk for diabetes across the continuum			X
5.2	**Applies national quality and safety initiatives to practice (eg, The Institute of Medicine, Healthy People 2020, Healthcare Effectiveness Data and Information Set [HEDIS], NCQA, AACE, American Diabetes Association)**		**X**	**X**	**X**
	5.2A	Participates in hospital/agency/institution, and local, state, and national quality initiatives	X	X	X
	5.2B	Leads efforts to maximize quality diabetes care		X	X
5.3	**Participates in implementation of an outcomes management system to evaluate the effectiveness and efficiency of diabetes practice**		**X**	**X**	**X**
	5.3A	Selects criteria for data collection, and advocates for and participates in the development of clinical, operational, and financial data collection tools upon which diabetes nutrition care-sensitive outcomes can be derived, reported, and used for improvement		X	X
	5.3B	Serves in leadership role to evaluate benchmarks of diabetes care based on public health and population based indicators (eg, Healthy People 2020 Leading Health Indicators, HEDIS, and national diabetes quality improvement measure sets)			X
5.4	**Measures quality of diabetes care in terms of process and outcomes**		**X**	**X**	**X**
	5.4A	Participates in the development and implementation of policies and procedures for providing services and monitoring clients receiving diabetes care	X	X	X
	5.4B	Evaluates the provision of diabetes care, including staff: patient/client ratio, reimbursement data and customer satisfaction survey results		X	X
	5.4C	Develops policies for data analysis according to program needs			X
5.5	**Identifies performance improvement criteria to monitor effectiveness of services**		**X**	**X**	**X**
	5.5A	Participates in multidisciplinary efforts to improve diabetes care outcomes	X	X	X
	5.5B	Serves in leadership role of multidisciplinary efforts to establish and improve diabetes care interventions and outcomes		X	X
	5.5C	Publishes effectiveness outcomes on programs and services			X
5.6	**Designs and tests interventions to improve processes and services**		**X**	**X**	**X**
	5.6A	Contributes to awareness of potential drug-nutrient and drug-herb/dietary supplement interactions and potential interactions between scheduled treatments and complimentary/alternative therapies	X	X	X
	5.6B	Develops systems to problem-solve and prevent errors (eg, medication errors, sharps disposal, blood-borne pathogens and infection control, hyper- and hypoglycemia)		X	X

Figure 3. (Continued)

Indicators for Standard 5: Quality in Practice			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
5.7	**Identifies and addresses potential errors and hazards in diabetes care**		**X**	**X**	**X**
	5.7A	Evaluates and ensures safe diabetes care		X	X
	5.7B	Maintains awareness of problematic product names (eg, insulin products, oral diabetes medications, injectables) and error prevention recommendations provided by Institute for Safe Medication Practices (ISMP—www.ismp.org), Food and Drug Administration (FDA—www.fda.gov), and United States Pharmacopeia (USP—www.usp.org)		X	X
5.8	**Identifies expected outcomes of diabetes care**		**X**	**X**	**X**
	5.8A	Participates in data collection and collation	X	X	X
	5.8B	Identifies quality outcomes to measure (eg, American Diabetes Association, AACE, NCQA, institution-specific measures)		X	X
5.9	**Documents outcomes of diabetes care**		**X**	**X**	**X**
	5.9A	Documents outcomes per selected protocol	X	X	X
	5.9B	Documents and reports outcomes according to identified metrics		X	X
5.10	**Compares actual performance to expected outcomes**		**X**	**X**	**X**
	5.10A	Compares individual performance to self-directed goals and expected outcomes	X	X	X
	5.10B	Compares departmental/organizational performance to goals and expected outcomes		X	X
	5.10C	Benchmarks departmental/organizational performance with national programs and standards		X	X
5.11	**Documents actions taken when discrepancies exist between actual performance and expected outcomes**		**X**	**X**	**X**
	5.11A	Seeks opportunities to obtain knowledge and skills to improve performance	X	X	X
	5.11B	Develops report of individual and departmental/organizational outcomes and improvement recommendations and disseminates findings		X	X
5.12	**Continuously evaluates and refines diabetes care based on measured outcomes**		**X**	**X**	**X**
	5.12A	Utilizes a continuous quality improvement approach to measure performance against desired outcomes using data from multiple sources	X	X	X
	5.12B	Leads in creating and evaluating systems, processes, and programs that support institutional and diabetes nutrition-related core values and evidence-based criteria		X	X

Examples of Outcomes for Standard 5: Quality in Practice

- Performance indicators are measured and evaluated
- Reports aggregate outcomes and compares to pre-established criteria (goals/objectives)
- Results of quality improvement activities direct refinement of practice

Figure 3. (Continued)

Standard 6: Competency and Accountability

RDs engage in lifelong learning.

Rationale: Competent and accountable practice includes continuous acquisition of knowledge and skill development.

Indicators for Standard 6: Competency and Accountability			**The "X" signifies the indicators for the level of practice**		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
6.1	**Conducts self-assessment of professional development opportunities at regular intervals**		**X**	**X**	**X**
6.2	**Identifies needs and seeks opportunities for professional development**		**X**	**X**	**X**
6.3	**Participates in peer review**		**X**	**X**	**X**
	6.3A	Participates in peer evaluation, including but not limited to peer supervision, clinical chart review, professional practice, and performance evaluations, as appropriate/applicable	X	X	X
6.4	**Mentors others**		**X**	**X**	**X**
	6.4A	Participates in mentoring entry level and generalist RDs and dietetic interns	X	X	X
	6.4B	Develops mentoring or internship opportunities for RDs in diabetes practice		X	X
	6.4C	Functions as a preceptor for RDs and dietetic interns in diabetes care and management		X	X
	6.4D	Functions as a preceptor for aspiring specialty level RDs		X	X
	6.4E	Directs and guides the professional development of RDs through implementation of supervised practice experiences in diabetes care and mentoring programs		X	X
	6.4F	Mentors RDs and other health care professionals in developing skills in accessing and critically analyzing research		X	X
6.5	**Develops and implements a plan for professional growth**		**X**	**X**	**X**
	6.5A	Pursues opportunities to participate in diabetes continuing education programs locally, regionally, and nationally	X	X	X
	6.5B	Develops and implements a plan for professional growth in the specialty practice areas of diabetes care (eg, participates in scholarly review of professional articles; serves as a reviewer or editorial board associate for diabetes journals)		X	X
	6.5C	Develops and implements a plan for professional growth for advanced practice areas (eg, leading an editorial board for scholarly review, including but not limited to diabetes professional articles, chapters or books)			X
6.6	**Documents professional development activities**		**X**	**X**	**X**
6.7	**Adheres to the ADA Code of Ethics**		**X**	**X**	**X**

Figure 3. (Continued)

Indicators for Standard 6: Competency and Accountability				The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)				**Generalist**	**Specialty**	**Advanced**
Each RD:						
6.8	**Assumes accountability and responsibility for actions and behaviors**			**X**	**X**	**X**
	6.8A	Exemplifies excellence and exhibits professionalism in diabetes care (eg, manages change effectively; demonstrates assertiveness, listening and conflict resolution skills; demonstrates ability to build coalitions)		X	X	X
	6.8B	Strives for an improvement in practice with self and others		X	X	X
		6.8B1	Is active in promoting the specialty of diabetes care		X	X
	6.8C	Develops and directs and policies and procedures that ensure staff accountability and responsibility when serving in a management role			X	X
	6.8D	Leads by example; exemplifies professional integrity as a leader of diabetes care				X
6.9	**Integrates the Revised SOP and SOPP for RDs in Diabetes Care into self-assessment and development plans**			**X**	**X**	**X**
	6.9A	Utilizes the Revised SOP and SOPP for RDs in Diabetes Care to assess performance at the appropriate level of practice		X	X	X
	6.9B	Utilizes the Revised SOP and SOPP for RDs in Diabetes Care to develop and implement a professional development plan to enhance practice and performance		X	X	X
	6.9C	Utilizes the Revised SOP and SOPP for RDs in Diabetes Care to develop and implement a professional development plan to progress practice and performance to a more advanced level			X	X
	6.9D	Develops corporate/institutional policies, guidelines, human resource material (eg, job descriptions, career ladders, acceptable performance level) using the Revised SOP and SOPP for RDs in Diabetes Care as guidelines			X	X
	6.9E	Uses advanced practice experience and knowledge to define specific actions for levels of practice (generalist, specialty, advanced) within the Revised SOP and SOPP for RDs in Diabetes Care				X
6.10	**Applies current research findings and best available evidence into practice**			**X**	**X**	**X**
6.11	**Obtains occupational certifications in accordance with federal, state, and local laws and regulations**			**X**	**X**	**X**
	6.11A	Attains and maintains state of residency and/or state of practice licensure/certification as appropriate to practice setting		X	X	X
	6.11B	Obtains and maintains specialty certification in diabetes (eg, Certified Diabetes Educator [CDE] or Board Certified–Advanced Diabetes Management [BC-ADM])			X	X
	6.11C	Develops programs, tools and resources in support of assisting RDs to obtain specialty certification in diabetes care			X	X
	6.11D	Develops programs, tools and resources in support of assisting RDs to obtain advanced practice certification in diabetes care				X

Figure 3. (Continued)

Indicators for Standard 6: Competency and Accountability			The "X" signifies the indicators for the level of practice		
(Bold Font Indicators are ADA Core RD Standards of Professional Performance Indicators)			**Generalist**	**Specialty**	**Advanced**
Each RD:					
6.12	**Pursues leadership opportunities**		**X**	**X**	**X**
	6.12A	Pursues opportunities to acquire professional skills to network, communicate, and gather information to promote understanding of diabetes care	X	X	X
	6.12B	Serves on local diabetes planning committees/task forces/advisory boards for health professionals and industry	X	X	X
	6.12C	Serves on regional and national diabetes planning committee task force/advisory boards for health professionals and industry		X	X
	6.12D	Proactively seeks opportunities to integrate diabetes practices and programs at the local, regional, national, and international level		X	X
	6.12E	Pursues leadership development opportunities to be identified as a recognized expert in diabetes care		X	X
	6.12F	Identifies new opportunities for collaborative practice and opportunities to promote the role of the RD in diabetes care		X	X
	6.12G	Develops, tests, implements, reviews, and revises, as appropriate, innovative approaches to complex diabetes practice issues			X

Examples of Outcomes for Standard 6: Competency and Accountability

- Self assessments are completed
- Development needs are identified
- Directed learning is demonstrated
- Practice reflects the ADA Code of Ethics
- Practice reflects the ADA Standards of Practice and Standards of Professional Performance
- Practice reflects best available evidence
- Relevant certifications are obtained
- Commission on Dietetic Registrations recertification requirements are met

Figure 3. (Continued)

AGENDA

ANNUAL PROGRAM REVIEW & PLAN—XX-XX-200X

(The Annual Program Review is the yearly evaluation by the oversight/advisory system of DSMT operations and performance. Using that review, an Annual Program Plan is developed. This is a Strategic Plan and Review. Programs that are just beginning should use the agenda and minutes format to record their initial/planning meeting.)

Agenda item	Agenda item
1.	**Goal achievement of DSMT operations** Review status of goals and/or objectives established for the DSMT entity and, based on the review, develop new goals for the upcoming year.
2.	**Data analysis of DSMT operations** Analysis and review of participant access data and follow-up rates and other relevant data.
3.	**Mission statement of DSMT** Review the mission statement and appropriateness to DSMT operations. Revise if necessary.
4.	**Organizational structure of DSMT** Review the organizational structure to assess if the current structure is meeting the needs of the DSMT operations and participants. Include a copy of the Organizational Chart showing the DSMT operations in the agenda packet.
5.	**Population served by DSMT** Analysis and review of participant population data, who is your program's target population, and how the DSMT program is meeting the needs of the population it is serving.
6.	**Resources of DSMT** Review the adequacy of resources and plan for any needs in the upcoming year. (the Oversight/Advisory group may not have authority over all of these topics but they must be informed about them) **a. Personnel** **b. Budget** **c. Equipment**
7.	**Curriculum Review** Review the curriculum to ensure that it is current and the handouts are appropriate for the target population
8.	**Community Concerns** Review the program's community involvement, such as health fairs, staff serving on local ADA committees and/or boards, staff serving on the boards for the local health department.

9.	**Outcome data measurements of DSMT participants and operations** Evaluate effectiveness of DSMT program based on the data collected from the participants' individualized behavioral goal and the program outcome measure. Review the Continuous Quality Improvement project. Present hard data with this item. **a. Behavior Change Objectives—data analysis** **b. Program Outcome Measure—data analysis** **c. Continuous Quality Improvement—project analysis/review**

MINUTES—XX-XX-200X (Template)

ANNUAL PROGRAM REVIEW & PLAN

(The Annual Program Review is the yearly evaluation by the oversight/advisory system of DSMT operations and performance. Using that review, an Annual Program Plan is developed. This is a Strategic Plan and Review.)

Chairperson—(Write the person's name here.)
ATTENDED
Professional Staff Members—(List their names here)
Stakeholder Members—(List their names here.)

ABSENT
Professional Staff Members—(List their names here)
Stakeholder Members—(List their names here.)

Goal achievement of DSMT operations
Review status of goals and/or objectives established for the DSMT entity from the previous year, list the goals here and evaluate if the goal was met or not. Based upon that review and other needs of the program or sponsoring organization, develop new program goals for the upcoming year and list them here.

Discussion:

Data analysis of DSMT operations
Analysis and review of participant access data and follow-up rates and other relevant data. List follow-up rates, lost to the program numbers, lost to follow-up numbers and any policies that are relevant to your program's operations. You may need to refer to an attachment from the agenda packet that you have added to this "Minutes" document.

Discussion:

Mission statement of DSMT

Review the mission statement and appropriateness to DSMT operations. Revise if necessary. A mission statement guides the operations. It should be related to the mission statement of your program's sponsoring organization. Write it here in this "Minutes" document.

Discussion:

Organizational structure of DSMT

Review the organizational structure to assess if the current structure is meeting the needs of the DSMT operations and participants. Include a copy of the Organizational Chart showing the DSMT operations in the agenda packet and include a copy in this "Minutes" document.

Discussion:

Population served by DSMT

Analyze your program's participant population data, identify who is your program's target population, and how the DSMT program is meeting the needs of the population it is serving. Write it here.

Discussion:

Resources of DSMT

Review the adequacy of resources and plan for any needs in the upcoming year.
(the Oversight/Advisory group may not have authority over all of these topics but they must be informed about them)

Personnel (Write here the personnel that you have and if it is adequate to meet the program's needs. If not adequate, what is being done to improve the situation.)

Discussion:

Budget (Write here if the financial situation is supporting the program. You may or may not want to include a written budget as an addendum to this "Minutes" document.

Discussion:

Equipment (Write here if you have adequate equipment, i.e. computers, paper, supplies, etc. and adequate space to deliver your program.)

Discussion:

Curriculum Review

Review the curriculum to ensure that it is current and the handouts are appropriate for the target population. Write here any changes in the curriculum that had to be made to keep the curriculum current. Ensure that Oversight Committee is aware of what constitutes a complete curriculum.

Discussion:

Outcome data measurements of DSMT participants and operations

Evaluate effectiveness of DSMT program based on the data collected from the participants' individualized behavioral goal and the program outcome measure.

Review the Continuous Quality Improvement project. Present hard data with this item. It might be best to add these items as addendum pages to the agenda packet and this "Minutes" document. Some programs present this data as a bar or pie chart.

- **Behavior Change Objectives—data analysis**
- **Program Outcome Measure—data analysis**
- **Continuous Quality Improvement—project analysis/review**

Discussion:

.

Diabetes Services Order Form (DSMT and MNT Services)

***Indicates required information for Medicare order**

PATIENT INFORMATION

Patient's Last Name | First Name | Middle

Birth Date ☐ / ☐ / ☐ | Medicare HICN # | Gender ☐ Male ☐ Female

Address | City | State | Zip Code

Home Phone | Work Phone | Other Contact Phone

Diabetes self-management training (DSMT) and medical nutrition therapy (MNT) are individual and complementary services to improve diabetes care. For Medicare beneficiaries, both services can be ordered in the same year. Research indicates MNT combined with DSMT improves outcomes.

DIABETES SELF-MANAGEMENT TRAINING (DSMT)

Medicare: 10 hours initial DSMT in 12 month period, plus 2 hours follow-up DSMT annually

**Check type of training services and number of hours requested:*

- ☐ Initial group DSMT: ☐ 10 hours or ☐ no. hrs. requested
- ☐ Follow-up DSMT: ☐ 2 hours or ☐ no. hrs. requested
- ☐ Additional insulin training: ☐ no. hrs. requested

***Patients with special needs requiring individual DSMT**

Check all special needs that apply:

- ☐ Vision ☐ Hearing ☐ Physical ☐ Cognitive Impairment
- ☐ Language limitations ☐ Other

***DSMT Content**

- ☐ All ten content areas, as appropriate
- ☐ Monitoring diabetes
- ☐ Psychological adjustment
- ☐ Nutritional management
- ☐ Medications
- ☐ Preconception/pregnancy management or gestational diabetes management
- ☐ Diabetes as disease process
- ☐ Physical activity
- ☐ Goal setting, problem solving
- ☐ Prevent, detect and treat acute complications
- ☐ Prevent, detect and treat chronic complications

* DIAGNOSIS

Please send recent labs for patient eligibility & outcomes monitoring

- ☐ Type 1 uncontrolled ☐ Type 1 controlled
- ☐ Type 2 uncontrolled ☐ Type 2 controlled
- ☐ Gestational diabetes ☐ Other

Complications/Comorbidities

Check all that apply:

- ☐ Hypertension ☐ Dyslipidemia ☐ Stroke
- ☐ Neuropathy ☐ Nephropathy ☐ PVD
- ☐ Renal disease ☐ Retinopathy ☐ CHD
- ☐ Non-healing wound ☐ Pregnancy ☐ Obesity
- ☐ Mental/affective disorder ☐ Other

MEDICAL NUTRITION THERAPY (MNT)

Medicare: 3 hours initial MNT in the first calendar year, plus two hours follow-up MNT annually. Additional MNT hours available for change in medical condition, treatment and/or diagnosis.

**Check the type of MNT and/or number of additional hours requested:*

- ☐ Initial MNT ☐ Annual follow-up MNT
- ☐ Additional MNT services in the same calendar year, per RD recommendations ☐ no. additional hrs. requested

Please specify change in medical condition, treatment and/or diagnosis:

CURRENT DIABETES MEDICATIONS

Specify type, dose and frequency

Oral:

Insulin:

Patient now uses: ☐ Pen ☐ Needle ☐ Pump

PATIENT BEHAVIOR GOALS/PLAN OF CARE

*Signature and UPIN # _____ *Date ☐ / ☐ / ☐

Group/practice name, address and phone:

Revised 8/31/05 by the American Dietetic Association and the American Association of Diabetes Educators after substantial review and consultation.
Authors do not recommend or endorse any revisions or modifications.

Diabetes Self-Management Training Referral/ Physician's Order

_____ Name (Last) (First) (M.I.)	**Health Insurance** ☐ Medicare ☐ MaineCare ☐ Commercial ☐ Dirigo ☐ No Insurance	Phone(s)	Date of Birth
Address	Town		

Diabetes Control
☐ Controlled ☐ Uncontrolled

Type/Management
☐ Type 1

☐ Type 2 – Diet and Exercise Only
☐ Type 2 – Oral Agent(s):
  ☐ Monotherapy
  ☐ Combination Therapy
☐ Type 2 – Insulin
☐ Type 2 – Insulin & Oral(s)

☐ Gestational Diabetes
☐ Diabetes with pregnancy

Measures/Labs
☐ Monofilament Test Done / Date _____
  ☐ Normal ☐ Decreased ☐ Absent
☐ Blood Pressure / Date _____
  Systolic _____Diastolic_____
☐ A1C _____ Range _____ : _____
  Date of last A1C_____
☐ Dilated Eye Examination/ Date _____
☐ Lipid Profile/ Date _____
  Total Cholesterol _____ Triglycerides _____
  LDL _____ HDL ____
☐ Microalbumin Screen _____/ Date _____
  Range _____ : _____
  Method: ☐ 24 Hr ☐ Timed ☐ A/C Ratio
☐ Influenza Vaccine in past year
☐ Pneumococcal Vaccine

Complications/Risks
☐ Hospital Admissions
  ☐ Any Cause
  ☐ DM-Related
  ☐ DKA/HHNS
  ☐ Cardiac
☐ Emergency Room Visit
☐ Lower Extremity Ulcers/ Amputation
☐ Obesity
☐ Neuropathy
☐ Nephropathy
☐ Retinopathy

Associated Cardiovascular Conditions
☐ MI/CAD ☐ Hypertension
☐ Peripheral Vascular Disease
☐ Hyperlipidemia ☐ Dyslipidemia
☐ TIA/Stroke

Physician's Orders

Please schedule the following Diabetes Self-Management Education (DSME) for my patient:

☐ Comprehensive Diabetes Self Management, which includes: Assessment, Nutrition, Monitoring, High and Low Blood Glucose, Sick Days, Risk Reduction, Exercise, and Foot Care (description of programs attached)
☐ Medical Nutrition Therapy
☐ Nutrition and Exercise program for overweight patients with Type 2 diabetes or pre -diabetes
☐ Other (Describe)

Please schedule individualized education sessions for my patient because of the following reasons:

☐ Language limitations or barrier ☐ Severe hearing impairment ☐ Severe vision impairment ☐ Other (Specify)

I certify that diabetes self-management training (DSMT) is needed under a comprehensive plan for this patient's diabetes care for the reasons listed above

_____ _____/_____

Please Print Physician's Name **Physician Signature** **Date**

Diabetes Self-Management Training (DSMT) Behavioral Goals/Plan of Care

(Return DSMT/4 with One-Year Follow-up Form DSMT/8-9) (Postasses)

	Site No.	Program No.
____Jones_____John_____ _S___ Name (Last) (First) M.I.)	99	99JSJ082000

New **R**ev **C**ont	Date	Initials	Behavior Goal	Success Noted Goal Category	Date	1-3	4-5
N	08/20/00	JD	I will walk daily for 20 mins. after dinner	1			
N	08/20/00	JD	I will play ball for 30 mins. 2x/wk for recreation	7			
			Example of Progression				

Goal Category

1. Exercise
2. Meal planning
3. Monitoring
4. General knowledge
5. Medications
6. Foot care
7. Psychological adjustment/stress
8. Recognize/treat hypo/hyperglycemia
9. Blood pressure monitoring
10. Smoking cessation
11. Health care visits

88. Other

Success Attainment Scale 1-5: 1=None 2=Little 3=Some 4=Mostly 5=Always

John Jones /8/20/00 Jane Dow, RN, CDE /8/20/00 _____/_____

Signature of Participant / Date **Signature of Nurse Instructor / Date** **Signature of Dietitian Instructor / Date**

Diabetes Self-Management Training (DSMT) Behavioral Goals/Plan of Care

(Return DSMT/4 with One-Year Follow-up Form DSMT/8-9) (3 Month Follow-up)

	Site No.	Program No.
____Jones_____John_____ _S___ Name (Last) (First) M.I.)	99	99JSJ082000

New Rev Cont	Date	Initials	Behavior Goal	Success Noted: Goal Category	Date	1-3	4-5
N	08/20/00	JD	I will walk daily for 20 mins. after dinner	1	11/7	3	
N	08/20/00	JD	I will play ball for 30 mins. 2x/wk for recreation	7	11/7		5
C	11/7/00	JD	I will walk daily for 20 mins. after dinner	1			

Goal Category

1. Exercise
2. Meal planning
3. Monitoring
4. General knowledge
5. Medications
6. Foot care
7. Psychological adjustment/stress
8. Recognize/treat hypo/hyperglycemia
9. Blood pressure monitoring
10. Smoking cessation
11. Health care visits

88. Other

Success Attainment Scale 1-5: 1=None 2=Little 3=Some 4=Mostly 5=Always

John Jones /8/20/00 Jane Dow, RN, CDE /8/20/00 _____/_____

Signature of Participant / Date **Signature of Nurse Instructor / Date** **Signature of Dietitian Instructor / Date**

Diabetes Self-Management Training (DSMT) Behavioral Goals/Plan of Care

(Return DSMT/4 with One-Year Follow-up Form DSMT/8-9) (6 Month Follow-up)

	Site No.	Program No.
____Jones_____John_____ _S___ Name (Last) (First) M.I.)	99	99JSJ082000

New Rev Cont	Date	Initials	Behavior Goal	Success Noted			
				Goal Category	Date	1-3	4-5
N	08/20/00	JD	I will walk daily for 20 mins. after dinner	1	11/7	3	
N	08/20/00	JD	I will play ball for 30 mins. 2x/wk for recreation	7	11/7		5
C	11/7/00	JD	I will walk daily for 20 mins. after dinner	1	2/12//01		4
N	2/12/01	JD	I will space my meals 4-5 hrs. apart	2			
N	2/12/01	JD	I will make appt. w/Dr. to discuss smoking cessation	10			

Goal Category

1. Exercise
2. Meal planning
3. Monitoring
4. General knowledge
5. Medications
6. Foot care
7. Psychological adjustment/stress
8. Recognize/treat hypo/hyperglycemia
9. Blood pressure monitoring
10. Smoking cessation
11. Health care visits
88. Other

Success Attainment Scale 1-5: 1=None 2=Little 3=Some 4=Mostly 5=Always

John Jones /8/20/00 Jane Dow, RN, CDE /8/20/00 _____/_____

Signature of Participant / Date **Signature of Nurse Instructor / Date** **Signature of Dietitian Instructor / Date**

Diabetes Self-Management Training (DSMT) Behavioral Goals/Plan of Care

(Return DSMT/4 with One-Year Follow-up Form DSMT/8-9) (Interim)

Name (Last) (First) M.I.	Site No.	Program No.
____Jones_____John_____ _S___	99	99JSJ082000

New Rev Cont	Date	Initials	Behavior Goal	Success Noted: Goal Category	Success Noted: Date	Success Noted: 1-3	Success Noted: 4-5
N	08/20/00	JD	I will walk daily for 20 mins. after dinner	1	11/7	3	
N	08/20/00	JD	I will play ball for 30 mins. 2x/wk for recreation	7	11/7		5
C	11/7/00	JD	I will walk daily for 20 mins. after dinner	1	2/12/01		4
N	2/12/01	JD	I will space my meals 4-5 hrs. apart	2	2/17/01	2	
N	2/12/01	JD	I will make appt. w/Dr. to discuss smoking cessation	10	2/17/01		5
R	2/17/01	SS	I will eat 3 meals/day, 4-5 hrs. apart	2			

Goal Category

1. Exercise
2. Meal planning
3. Monitoring
4. General knowledge
5. Medications
6. Foot care
7. Psychological adjustment/stress
8. Recognize/treat hypo/hyperglycemia
9. Blood pressure monitoring
10. Smoking cessation
11. Health care visits
88. Other

Success Attainment Scale 1-5: 1=None 2=Little 3=Some 4=Mostly 5=Always

John Jones /8/20/00 — **Signature of Participant / Date**

Jane Dow, RN, CDE /8/20/00 — **Signature of Nurse Instructor / Date**

Sally Smith, R.D. C.D.E /3/30/01 — **Signature of Dietitian Instructor / Date**

Diabetes Self-Management Training (DSMT) Behavioral Goals/Plan of Care

(Return DSMT/4 with One-Year Follow-up Form DSMT/8-9) (Interim)

	Site No.	Program No.
____Jones_____John_____ _S___ Name (Last) (First) M.I.)	99	99JSJ082000

New **R**ev **C**ont	Date	Initials	Behavior Goal	Success Noted: Goal Category	Success Noted: Date	Success Noted: 1-3	Success Noted: 4-5
N	08/20/00	JD	I will walk daily for 20 mins. after dinner	1	11/7	3	
N	08/20/00	JD	I will play ball for 30 mins. 2x/wk for recreation	7	11/7		5
C	11/7/00	JD	I will walk daily for 20 mins. after dinner	1	2/12/01		4
N	2/12/01	JD	I will space my meals 4-5 hrs. apart	2	2/17/01	2	
N	2/12/01	JD	I will make appt. w/Dr. to discuss smoking cessation	10	2/17/01		5
R	2/17/01	SS	I will eat 3 meals/day, 4-5 hrs. apart	2			
C	3/30/01	SS	I will eat 3 meals/day, 4-5 hrs apart	2			
N	3/30/01	SS	I will include 1 fruit or 1 veggie w/each meal	2			
N	3/30/01	SS	I will change from whole milk to 2% starting this week	2			

Goal Category

1. Exercise
2. Meal planning
3. Monitoring
4. General knowledge
5. Medications
6. Foot care
7. Psychological adjustment/stress
8. Recognize/treat hypo/hyperglycemia
9. Blood pressure monitoring
10. Smoking cessation
11. Health care visits
88. Other

Success Attainment Scale 1-5: 1=None 2=Little 3=Some 4=Mostly 5=Always

John Jones /8/20/00 — **Signature of Participant / Date**

Jane Dow, RN, CDE /8/20/00 — **Signature of Nurse Instructor / Date**

Sally Smith, R.D. C.D.E /3/30/01 — **Signature of Dietitian Instructor / Date**

Diabetes Self-Management Training (DSMT) Behavioral Goals/Plan of Care

(Return DSMT/4 with One-Year Follow-up Form DSMT/8-9) (Interim)

	Site No.	Program No.
____Jones_____John_____ _S___ Name (Last) (First) M.I.)	99	99JSJ082000

New Rev Cont	Date	Initials	Behavior Goal	Success Noted: Goal Category	Success Noted: Date	Success Noted: 1-3	Success Noted: 4-5
N	08/20/00	JD	I will walk daily for 20 mins. after dinner	1	11/7	3	
N	08/20/00	JD	I will play ball for 30 mins. 2x/wk for recreation	7	11/7		5
C	11/7/00	JD	I will walk daily for 20 mins. after dinner	1	2/12/01		4
N	2/12/01	JD	I will space my meals 4-5 hrs. apart	2	2/17/01	2	
N	2/12/01	JD	I will make appt. w/Dr. to discuss smoking cessation	10	2/17/01		5
R	2/17/01	SS	I will eat 3 meals/day, 4-5 hrs. apart	2	3/30/01	3	
C	3/30/01	SS	I will eat 3 meals/day, 4-5 hrs apart	2	4/30/01		4
N	3/30/01	SS	I will include 1 fruit or 1 veggie w/each meal	2	4/30/01	3	
N	3/30/01	SS	I will change from whole milk to 2% starting this week	2	4/30/01		5
C	4/30/01	SS	I will include 1 fruit or 1 veggie w/each meal	2			

Goal Category

1. Exercise
2. Meal planning
3. Monitoring
4. General knowledge
5. Medications
6. Foot care
7. Psychological adjustment/stress
8. Recognize/treat hypo/hyperglycemia
9. Blood pressure monitoring
10. Smoking cessation
11. Health care visits
88. Other

Success Attainment Scale 1-5: 1=None 2=Little 3=Some 4=Mostly 5=Always

John Jones /8/20/00 — Jane Dow, RN, CDE /8/20/00 — Sally Smith, R.D. C.D.E /3/30/01

Signature of Participant / Date **Signature of Nurse Instructor / Date** **Signature of Dietitian Instructor / Date**

PATIENT HEALTH QUESTIONNAIRE PHQ-9 FOR DEPRESSION

USING PHQ-9 DIAGNOSIS AND SCORE FOR INITIAL TREATMENT SELECTION

A depression diagnosis that warrants treatment or treatment change, needs at least one of the first two questions endorsed as positive *(little pleasure, feeling depressed)* indicating the symptom has been present more than half the time in the past two weeks.

In addition, the tenth question about difficulty at work or home or getting along with others should be answered at least "somewhat difficult."

When a depression diagnosis has been made, patient preferences should be considered, especially when choosing between treatment recommendations of antidepressant treatment and psychotherapy.

PHQ-9 Score	Provisional Diagnosis	Treatment Recommendation
5-9	Minimal symptoms*	Support, educate to call if worse; return in 1 month.
10-14	Minor depression ††	Support, watchful waiting
	Dysthymia*	Antidepressant or psychotherapy
	Major depression, *mild*	Antidepressant or psychotherapy
15-19	Major depression, *moderately severe*	Antidepressant or psychotherapy
≥ 20	Major depression, *severe*	Antidepressant and psychotherapy (especially if not improved on monotherapy)

* If symptoms present ≥ two years, then probable chronic depression which warrants antidepressant or psychotherapy (ask, *"In the past 2 years have you felt depressed or sad most days, even if you felt okay sometimes?"*).

†† If symptoms present ≥ one month or severe functional impairment, consider active treatment.

USING THE PHQ-9 TO ASSESS PATIENT RESPONSE TO TREATMENT

- The goal of acute phase treatment is remission of symptoms as indicated by a PHQ-9 Score of < 5 points.
- Patients who achieve this goal enter into the continuation phase of treatment.
- Patients who do not achieve this goal remain in acute phase treatment and require some alteration in treatment (dose increase, augmentation, combination treatment).
- Patients who do not achieve remission after two adequate trials of antidepressant and/or psychological counseling or by 20 to 30 weeks would benefit from a formal or informal psychiatric consultation for diagnostic and management suggestions.

Initial Response after Four - Six weeks of an Adequate Dose of an Antidepressant		
PHQ-9 Score	**Treatment Response**	**Treatment Plan**
Drop of ≥ 5 points from baseline	Adequate	No treatment change needed. Follow-up in four weeks.
Drop of 2-4 points from baseline.	Probably Inadequate	Often warrants an increase in antidepressant dose
Drop of 1-point or no change or increase.	Inadequate	Increase dose; Augmentation; Switch; Informal or formal psychiatric consultation; Add psychological counseling
Initial Response to Psychological Counseling after Three Sessions over Four - Six weeks		
PHQ-9 Score	**Treatment Response**	**Treatment Plan**
Drop of ≥ 5 points from baseline	Adequate	No treatment change needed. Follow-up in four weeks.
Drop of 2-4 points from baseline.	Probably Inadequate	Possibly no treatment change needed. Share PHQ-9 with psychological counselor.
Drop of 1-point or no change or increase.	Inadequate	If depression-specific psychological counseling (CBT, PST, IPT*) discuss with therapist, consider adding antidepressant. For patients satisfied in other type of psychological counseling, consider starting antidepressant For patients dissatisfied in other psychological counseling, review treatment options and preferences

** CBT – Cognitive-Behavioral Therapy; PST – Problem Solving Treatment; IPT – Interpersonal Therapy*

Use of the PHQ-9 to Make a Tentative Depression Diagnosis
(Symptomatology & Functional Impairment)

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

STEP 1:
Need one or both questions endorsed as "2" or "3" ("More than half the days" or "Nearly every day")

Over the *last 2 weeks*, how often have you been bothered by any of the following problems?

		Not at all	Several days	More than half the days	Nearly every day
1	Little interest or pleasure in doing things	0	1	2	3
2	Feeling down, depressed, or hopeless	0	1	2	3
3		0	1	2	3
4		0	1	2	3
5	Poor appetite or overeating	0	1	2	3
6	Feeling bad about yourself - or that you are a failure or have let yourself or your family down	0	1	2	3
7	Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8	Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9	Thoughts that you would be better off dead or of hurting yo	0	1	2	3

STEP 2:
Need a total of five or more boxes endorsed within the shaded areas of the form to arrive at the total SYMPTOM COUNT.

STEP 3:
FUNCTIONAL IMPAIRMENT is endorsed as "somewhat difficult" or greater.

TOTAL SYMPTOMS endorsed more than half the days (except question 9 - any positive endorsement) ____

10	If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	Not difficult at all Somewhat difficult Very difficult Extremely difficult	____ ____ ____ ____

Use of the PHQ-9 for Treatment Selection & Monitoring
(Determining a Severity Score)

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

	Over the *last 2 weeks*, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1	Little interest or pleasure in doing things	0	1	2	3
2	Feeling down, depressed, or hopeless	0	1	2	3
3	Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4		)	1	2	3
5		)	1	2	3
6		)	1	2	3
7		)	1	2	3
8	Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9	Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3

STEP 1:
Count each item in the column labeled "Several Days" and multiply by one. Enter that number below that column.

STEP 2:
Count each item in the column labeled "More than half the days" and multiply by two. Enter that number below that column.

STEP 3:
Count each item in the column labeled "Nearly every day" and multiply by three. Enter that number below that column.

STEP 4:
Add the totals for each of the three columns together. This is the SEVERITY SCORE.

STEP 4:
Add the totals for each of the three columns together.
Enter the TOTAL. This is the SEVERITY SCORE.

umns:

OTAL:

10	If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?	Not difficult at all Somewhat difficult Very difficult Extremely difficult	_____ _____ _____ _____

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

NAME: _____ **DATE:** _____

Over the *last 2 weeks,* how often have you been bothered by any of the following problems?
(use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3
	add columns:		+	+
	TOTAL:			

10. If you checked off *any* problems, how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?	**Not difficult at all**	_____
	Somewhat difficult	_____
	Very difficult	_____
	Extremely difficult	_____