

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



Diabetes Self-Management Education and Support (DSMES)

Program Manual

2019 Edition



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Diabetes Self-Management Training (DSMES) Program Manual

Introduction

This manual provides guidelines for the implementation of the Maine Diabetes Self-Management Education and Support (DSMES) 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 is consistent with the *most current National Standards for Diabetes Self-Management Education and Support*. (As found in: *Diabetes Care*, a publication of the American Diabetes Association – Professional – Annual Supplement)

Development of this DSMES Program Manual was supported under a Cooperative Agreement with the Centers for Disease Control and Prevention. 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, hereafter referred to as the Department.

Chronic Disease Prevention & Control Program
Division of Disease Prevention
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

Revised Summer 2018

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. Since 1996, 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 Education and Support (DSMES) is the term used to define what ADEF started as here in Maine. In 2019 and thereafter this manual and its instruction will use the DSMES Program Manual name in order to align with the national terminology, reimbursement language, and policies related to DSMES. For a full history of the ADEF/DSMES program see Tab 16 in the Appendix of this manual.

Acknowledgements

The Chronic Disease Prevention and Control Program acknowledge the many individuals and organizations that contributed to the development of the DSMES Program Manual. Special thanks are given to the DSMES Program Manual Review Team for their willingness to contribute their time and expertise to the 2019 revisions of this manual:

Patricia Watson, MS, RD, CDE – Stephens Memorial Hospital
Betty Sirois, MSN, RN, CDE – Stephens Memorial Hospital

Editors:

Judith Angsten
Chronic Disease Prevention and Control Program
Division of Disease Prevention
Maine Center for Disease Control and Prevention
Department of Health and Human Services
Augusta, Maine 04333-0011
(207)287-5380

Nathan Morse, CHES, TTS-C
Chronic Disease Prevention and Control Program
Division of Disease Prevention
Maine Center for Disease Control and Prevention
Department of Health and Human Services
Augusta, Maine 04333-0011
(207)287-2907

Diabetes Self-Management Education and Support (DSMES) Program Program Management

DSMES Program Internal Structure

Standard 1 Internal Structure – The provider(s) of DSMES will document an organizational structure, mission statement, and goals. For those providers working within a larger organization, that organization will recognize and support quality DSMES as an integral component of diabetes care. Documentation of an organizational structure, mission statement, and goals can lead to efficient and effective provision of DSMES 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”.

DSMES Program Goals

The overall goal of the DSMES 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. This must be part of your DSMES programs Institutional Policy.

Institutional Policy from Lead Organization Supporting DSMES Program

Each DSMES Program site will establish a written institutional policy. Within the written institutional policy, a commitment is made for the creation, delivery and maintenance of the nationally accredited/recognized DSMES Program at the health system/network or within 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 DSMES 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 DSMES Program Site Program Coordinator, personnel, and Advisory Committee.

The written institutional policy will be established prior to an institution becoming

accredited/recognized as a DSMES Program site. Verification and review of the policy by the Department will occur prior to site personnel attending the DSMES Professional Diabetes Educator Program.

Subsequent diabetes prevention, treatment, control, and referral protocols will be developed within the institution to support and guide the utilization of the DSMES 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

###Start Sample###

This institution advocates the provision of an outpatient/primary care diabetes prevention and/or Diabetes Self-Management Education and Support (DSMES) program as an integral component to the care of persons with pre-diabetes or diabetes. The institution will deliver the DSMES Program and provide the necessary personnel and other resources to implement a program proportional to the size of the population the program will be targeting. The program will maintain the required National Accreditation/ Recognition and will comply with State of Maine Bureau of Insurance requirements to register with Chronic Disease Prevention and Control Program annually through a Letter of Understanding. This will be done through the following:

- *Outline composition of DSMES Program; Program Coordinator, Education Staff*
- *Outline Advisory Committee to provide/support DSMES/DSMS and Medical Nutrition Therapy MNT as part of service delivery*
- *Outline and Continuous Quality Improvement (CQI) Plan*
- *Outline any/all policies and protocols that guide the program and its service delivery*

###End Sample###

DSMES Program Objectives

Consider the following objectives of the DSMES Program:

- Assess each person referred to the DSMES 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 DSMES Program to achieve desired participant outcomes.

DSMES State Certified Program

The sponsoring agency/institution (DSMES Program Site) and Diabetes Self-Management Education and Support (DSMES) Program components and site responsibilities are outlined in this manual. DSMES 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 Department will review site adherence to DSMES program requirements and provide technical assistance to DSMES Programs to achieve and maintain DSMES Program and ADA or AADE Education Recognition Program status. If any questions arise surrounding this process, please call the Department at (207)287-5380.

This DSMES Program Manual and the DSMES Program Management and Curriculum content are based on the most recent *Standards of Medical Care in Diabetes* as well as the *National Standards for Diabetes Self-Management Education and Support*. Guidelines for achieving National DSMES Program accreditation/recognition from the American Diabetes Association (ADA) or American Association of Diabetes Educators (AADE) can be accessed online at the link provided in this manual.

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 Department of Health and Human Services.” 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 “ADA ERP”, or “AADE DEAP”, or “Indian Health Service Diabetes Education Recognition Program”.

Reimbursement to sites delivering the DSMES 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 DSMES Program site to pursue resolution for any/all insurance coverage issues with the assistance of qualified personnel at its sponsoring agency/institution. The Department will assist any DSMES Program site in these efforts if requested to do so by site personnel.

DSMES/DSMS External Input

Standard 2 External Input – The provider(s) of DSMES will seek ongoing input from external stakeholders and experts in order to promote program quality. For both individual and group providers of DSMES 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 DSMES 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 DSMES and/or DSMS being provided, while building bridges to key stakeholders. The result is effective, dynamic DSMES 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 DSMES Program site will have a standing Advisory or DSMS Committee that meets at least annually.

DSMES Advisory Committee - The committee will make recommendations to the DSMES Team regarding the development, implementation, and evaluation of the DSMES Program, inform its institution and/or peers about the DSMES Program, and seek direction from the institution and clinical peers regarding the DSMES Program and its services. 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
- Two instructors - which includes at least a registered dietitian (RD) and a registered nurse (RN) who have continuing education and experience in both diabetes, 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), such as Healthy Maine Partnerships (HMPs)
- Representative of the 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 Committee in addition to the core members.

Advisory Committee activities include the following:

- Participate in development and review of the annual plan for the DSMES Program
- Recommend educational policy for the DSMES Program
- Assist in identifying the target population and estimated caseload to be served by the DSMES Program
- Review educational materials
- Develop or recommend evaluation strategies for the program, including both individual and program outcomes to be tracked and reported
- 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 (minimum) review of the program including: target population, referral mechanisms, budget, availability, sustainability, publicity, DSMS, outcomes, annual plan, CQI activities, follow-up mechanisms, and evaluation methodology

DSMS Committee - The purpose of the Committee is to involve external (to the institution) health professionals, para-health professional, and community stakeholders in the planning and review of the DSMES Program and how it aims to support and facilitate external Diabetes Self-Management Support (DSMS) to patients with diabetes outside of the health system, DSMES program, and the patients primary care providers office. Composition of this group is defined by the DSMES Program Coordinator and the members of the DSMS Committee.

DSMS Committee activities include the following:

- Participate in development and review of the annual plan for the DSMES Program to identify shared needs and services that aims to support the patients with diabetes in settings outside of the health system, DSMES program, and the patient's primary care provider office.
- Provide complimentary services/support to DSMES that have been identified by patients with diabetes, the DSMES Advisory Committee and are within the scope of their organizations service provisions.
- Perform yearly (minimum) review of the services/support including: target population, referral mechanisms, budget, availability, publicity, sustainability, outcomes, annual plan, 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

Documentation is required to support that the established Advisory and DSMS committees which involves professional staff and other stakeholders convenes and plans annually. The Annual Plan represents the interests of the DSMES Program and addresses community concerns. The Annual Plan is an outline that defines and strategically guides the activities of the DSMES Program for the next year. The Annual Plan includes all of the topics listed under

the Annual Review.

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 or DSMS system of DSMES, reflecting its role as quality overseer on the operations and performance of the DSMES. The following topics must be addressed:

1. Goal achievement of DSMES operations – review status of goals and/or objectives established for the DSMES entity.
2. Data analysis of DSMES operations – analysis and review of participant data, follow-up rates and other relevant data.
3. Mission statement of DSMES – review mission statement and appropriateness to DSMES operations.
4. Organizational structure of DSMES – review organizational structure to assess if the current structure is meeting the needs of the DSMES operations and participants.
5. Population served by DSMES – analysis of the projected target population, review of participant population data and how the DSMES program is meeting the needs of the population it is serving. This analysis 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
 - Socioeconomic issues
 - Barriers to obtaining education

Once the target population and its issues are identified, the Advisory or 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 committee should adjust the program to meet the needs of the actual population.

6. Resources of DSMES – adequacy of resources including: personnel, budget, equipment and curriculum (Advisory or DSMS committee 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 DSMES participants – evaluate effectiveness of DSMES program based on behavioral goal and other outcome measurement data.

Minutes are to be recorded at each Advisory or DSMS committee meeting. 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 in the Appendix. 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).

DSMES Program Budget

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

The program budget will consider all expenses associated with the delivery of the DSMES 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 DSMES Program.

DSMES Program Access and Scheduling

Standard 3 Access - The provider(s) of DSMES 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 DSMES, one crucial issue is access. Providers of DSMES 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 DSMES 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.*

DSMES Program policy outlining target population to be served and supported.

Each DSMES Program will have a policy on file that outlines the specific population that the program aims to support. This policy must outline the support needs of the target population and how the program aims to meet individual needs as it relates to self-

management education and support. The policy must also outline how the program has identified DSMES Program access issues and how to overcome them. All of the policy's elements must lend themselves to ensuring that the target population's needs are being met, that the program frequency and duration are designed to meet those needs, and that the DSMES Program continually evaluates its methods and program design utilizing input from the target population.

Program Frequency

Each DSMES Program site will offer the DSMES Program at a frequency defined by the needs of the target population they are serving.

The DSMES 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 DSMES Programs in advance and shares this information with its neighboring practices and health systems (referral network). 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 DSMES Program includes the following components:

- Physician referral
- Preassessment interview
- One-to-one meal planning interview
- Series of classes (Group or Individual to be defined by program & patient needs)
- Postassessment interview (recommended to be conducted within one month after the last class)
- Recommended: 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 nine potential content areas (see *Curriculum* section of this manual) and be conducive to learning and completion. Six to nine (6-9) hours of class time is generally recommended, usually conducted as a series of four or five classes, and spaced over three to four weeks.

Each DSMES Program site will establish its own policy on class length and frequency, to best meet the needs of their target population participants.

Marketing of DSMES Program

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

Increase Referrals:

- Offer classes at varying times of day (evenings, weekends, or day-long program).
- Develop a policy on maximum waiting time to enter the program.
- Personally visit PCP offices to provide information about DSMES Program, interact with office staff and introduce yourself to providers.
- Host a breakfast to introduce PCP office staff to benefits of DSMES Program.
- Ask physician advisor to promote DSMES Program sharing outcome data at grand rounds.
- Have a participant who attended and benefited from DSMES speak at community groups or grand rounds as part of promotion of local DSMES Program.
- Provide local chronic disease and mental health care managers with information about DSMES Program.
- Design a brochure about the DSMES Program and distribute widely to PCP offices, community and worksite settings.
- Work with local health coalitions/organizations to promote attendance at DSMES program.
- Work with the local Public Health District Coordinating Council (DCC) to identify opportunities to include them and their members as part of the Advisory or DSMS committee.
- Work with the region's Community Care Team (CCT) to network on opportunities to generate referrals to the program. Include CCT members as part of the Advisory or DSMS committee.

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.

DSMES Program Coordinator

Standard 4 Program Coordination - A coordinator will be designated to oversee the DSMES 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 DSMES 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 DSMES and/or DSMS.

Program Coordinator Qualifications

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 the primary site as well as any satellite sites. The following requirements must be reflected in the written job description of the program coordinator (See below for Program Coordinator job description template).

- 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 and diabetes.
- Coordinator must oversee the planning, implementation and evaluation of the DSMES Program at all times.
- If CDE or BC-ADM Coordinator must meet/maintain the most current certification requirement of the National Certification Board for Diabetes Educators (NCBDE).
- If the coordinator is not a CDE they must have 15 CE credits per year.

A program coordinator must be in place at all times. If a coordinator leaves, the change must be reported to the site's appropriate Education Recognition Program and the Department within 30 days through a Change of Status form. (Available on ADA and AADE recognition/accreditation websites)

**PROGRAM COORDINATOR
JOB/POSITION DESCRIPTION (Sample)**

- 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 somewhere in the description of responsibilities:**
 - This person oversees the DSMES 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/other chronic disease care, patient education and/or program management, and verifies the coordinator's responsibilities in planning, implementing and evaluating the DSMES Program.

DSMES Program Instructors

Standard 5 Instructional Staff – One or more instructors will provide DSMES and, when applicable, DSMS. At least one of the instructors responsible for designing and planning DSMES and DSMS will be a registered nurse, registered dietitian, or pharmacist with training and experience pertinent to DSMES, or another professional with certification in diabetes care and education, such as a CDE or BC-ADM. Other health workers can contribute to DSMES 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 DSMES. 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 DSMES team and in providing DSMS. While DSMES 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 DSMES 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 DSMES 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, 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 ensure that the program meets the National Standards for DSMES Program and Education Recognition Program status.
- Instructors perform the preassessment, educational intervention, evaluation and follow-up with the program participants.

Discipline-specific licenses and/or registrations.

Single Discipline Program:

Single discipline programs consist of only one RD, one RN, and/or one pharmacist.

Instructor(s) must be *CDE or have BC-ADM or and accrue the current NCBDE requirement of continuing education* credits. Non-CDE professionals must accrue 20 hour/year (CE topics must be diabetes-specific, diabetes-related, education or psychosocial and relevant to services provided or population(s) served).

Multiple Discipline program:

Multiple discipline programs consist of at least one RD and one RN. Instructors working in a multi-disciplinary diabetes education setting (with other disciplines as part of the instructional staff) can be *CDE, BC-ADM and accrue the current NCBDE requirement of continuing education* credits.

DSMES Program Instructor responsibilities include:

- Participate in the planning, implementation, and evaluation of the DSMES Program
- Complete the one-to-one preassessment, and one-to-one meal planning interview for participants referred to the DSMES 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 DSMES Program Advisory/Oversight committee
- Document assessments and education of participants
 - o Individualize initial assessments
 - o Complete face-to-face assessment of participant's knowledge, self-management skills and diabetes-related behaviors based on the content areas of the National Standards
 - o Create an education plan with measurable learning objectives and participant selected objectives based on assessment
 - o Record educational interventions which include date of intervention, content taught and names of instructors

- o Evaluate progress towards or achievement of learning and behavioral objectives and related health or quality of life outcomes

Back-up Instructor

A back-up instructor is someone who teaches 10% or more of the total program, is professionally prepared, and supported by the DSMES Program Coordinator and primary staff to deliver any part of the DSMES Program curriculum as assigned. Back-up instructors need to complete all required program documentation and are eligible to attend the Professional Diabetes Educator Program (PDEP) training.

Resource Person

Someone who assists in the program could be considered a resource person. A resource person is someone who teaches less than 10% of the 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 Professional Diabetes Educator Program (PDEP) training.

Physician Advisor

It is recommended that each DSMES Program site has 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 DSMES Program
- Provide technical assistance to the DSMES Program Instructors on diabetes management as needed
- Promote and support patient referrals to the DSMES Program
- Participate on the DSMES Program Advisory or DSMS Committee
- Act as a liaison between the Advisory or DSMS Committee, 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 DSMES Program

Instructor Continuing Education

Program Instructors will participate in the Department's Professional Diabetes Educator Program (PDEP) when they first become a DSMES Program Instructor. Attendance at this Program is mandatory for all new instructors and program coordinators.

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 program's 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, session topic, program objective or course outline heading that clearly states issues related to diabetes, but does not specifically use the word, "diabetes". These topics shall include, but are not limited to the following: nutrition, exercise, retinopathy, nephropathy, neuropathy, cardiovascular disease, stroke, lipids, obesity, metabolic syndrome and pre-diabetes.
- Psychosocial is any program, session topic, program objective or course outline heading that clearly articulates psychiatric, psychological, behavior modification or social content.
- Educational is any program, session topic, 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 (CE's) must be awarded from an agency that accredits Continuing Education Programs. Examples of these agencies are ACCME, ANCC, ADA, ACPE, CDR. All CE's must have been earned within the year (12 months) prior to the date the 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.

Online CE offerings can be found at:

ADA: <http://professional.diabetes.org/content/diabetes-educator-resources>

AADE: <https://www.diabeteseducator.org/education-career>

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
- 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 (CDR) cards for registered dietitians must be current and available at the site at all times.

DSMES Program Curriculum

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 DSMES. The needs of the individual participant will determine which parts of the curriculum will be provided to that individual.

- *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.

The above outlined curriculum recommendations are taken from the most current National Standards for Diabetes Self-Management Education and Support & Medical Care Standards. This manual provides the State of Maine DSMES Program Curriculum Outline (which starts on section "Introduction to Curriculum") and is designed to offer the nine content areas outlined in Standard 6, including learning outcomes and teaching strategies.

Prediabetes

It is recommended that DSMES programs in Maine take steps to outline policy/protocol for their program that describes how and with what resources they are able to provide evidence-based education and support for people who are at high risk for Type 2 diabetes or have pre-diabetes. The State of Maine, DHHS, Maine CDC have worked to support and develop a National Diabetes Prevention Program (National DPP) Infrastructure in the State of Maine to fulfill this need. Currently, National DPP has limited insurance coverage in Maine and across the country. It is recommended that sites that become National DPP recognized work to maintain that recognition on an on-going basis in accordance with the most current U.S. CDC Diabetes Prevention Recognition Program (DPRP) Standards. DPRP Recognition will be critical to negotiating payment for this critical service in the future.

Link to current U.S. CDC Recognition Program Standards and Operating Procedures:
<http://www.cdc.gov/diabetes/prevention/pdf/dprp-standards.pdf>

The following are web links designed to help programs identify national and state resources that can help design new or improve current policies/protocols that aim to support institutions strategies for addressing population health as it relates to Type 2 Diabetes prevention.

U.S. CDC website link for Prevention Type 2 Diabetes:

<http://www.cdc.gov/diabetes/prevention/index.html>

Recognized National DPP Site Directory or how to become a recognized program:

https://nccd.cdc.gov/DDT_DPRP/Programs.aspx

State of Maine, Maine CDC – How to Get Started:

<http://rethinkdiabetes.org/>

Find & Post National DPP classes on the site

<http://rethinkdiabetes.org/upcoming-ndpp-classes/>

It is never too late to prevent Type 2 Diabetes...

DSMES Program Individualized for the patient

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.

Preassessment Outline

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 learner's 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 DSMES 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. Example DSMES forms are provided in the Appendix.**

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

- Relevant medical history and health status
- Attitudes and health beliefs
- Social supports
- Lifestyle
- Learning style and readiness to learn
- Current knowledge, skills, and behaviors related to diabetes self-care
- 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 patient's 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 also affect the learning experience. Assessing attitudes and health beliefs allows the instructor to make the DSMES 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 an individual's 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 DSMES 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 member/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, interests, and how any of these have 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 in the electronic medical record.

Knowledge/Skills/Behaviors

Each instructor may develop their own knowledge/skills/behavior checklist based on the unique needs and circumstances of their participants. 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 in the electronic 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 in the electronic 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. 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 in communication and expedite data collection.

Behavior Change Goals and Outcomes

Behavioral goal setting discussions may occur during the preassessment, one-on-one meal planning interviews and/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 in the electronic 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; will improve his/her health or quality of life; and that he/she is highly likely to achieve the goal.

Although behavior change goals are developed in the preassessment, one-on-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 upon 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.

See sample DSMES Service Form (DSMES/4) in the Appendix

All sample DSMES Service Forms are available in the Appendix or on the Maine DPCP website: <http://www.maine.gov/dhhs/mecdc/population-health/dcp/professionals.htm>

DSMES Program and its ongoing support for patients

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

See related content to this standard can be found under *Standard 2 External Input*.

DSMES Program tracking patient progress

STANDARD 9 - Patient Progress: The provider(s) of DSMES and DSMS will monitor whether participants are achieving their personal diabetes self-management goals and other outcomes as a way to evaluate the effectiveness of the educational interventions, using appropriate measurement techniques.

The DSMES Programs will assess and measure each participant's attainment of personal self-management goals and outcomes throughout the DSMES process. This is to be done using appropriate measurement techniques to evaluate the effectiveness of the DSMES Program as an intervention. In an effort to facilitate the individualized DSMES Program for all patients, the following areas of the required DSMES Program curriculum (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) represent examples where self-care and behavioral goals can be identified together with the patient. The following are example tables for tracking:

Outcomes Measures (Example)

Number of patient seen in the DSMES Program in the past 12 months: **((###))					
Category Goals	# patients who chose goal	# patients who chose goal and completed program	# patients who reported success w/ goal and completed program	# patients who reported success w/ goal and completed program	Target % of patient goal achievement
Healthy Eating					
Physical Activity					
Taking Medication					
Problem Solving					
Reducing Risks					
Healthy Coping					

****** represents the patient who completed the DSMES Program in accordance to our policy

Aggregate Patient Clinical Outcomes (Example)

Clinical Outcomes	Average Baseline before DSMES	Average after Completion of DSMES & Follow-up	Comments:
A1c	8.4	6.8	100%
Blood Pressure	144/98	132/88	100%
BMI	32	30	100%

Aggregate Patient Selected Measures (Example)

Indicator: Patients who completed examinations	# completed exam in 12 months prior to starting DSMES	# completed exam <u>after</u> starting DSMES	Total # exams completed	40** patients completed the program within the evaluation period
Eye Exam	20	18	38	84.8%
Foot Exam	23	17	40	100%

DSMES providers who account for these differences when collaborating with participants on the design of personalized DSMES 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.

DSMES 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 to the DSMES Program and its participants. DSMES Programs may also utilize one of the ADA or AADE recognition bodies DSMES program software:

ADA – Chronicle Diabetes

<http://professional.diabetes.org/content/chronicle-diabetes>

AADE – AADE7 SYSTEM

<https://www.diabeteseducator.org/practice/aade7-system>

Sites may also continue with the DSMES Program's paper system. The Department has encouraged all sites to be converted to a computer based data collection system.

See sample DSMES Service Forms (DSMES 1-9) in the Appendix.

Continuous Quality Improvement

Standard 10 Quality Improvement – The provider(s) of DSMES 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 DSMES 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 DSMES 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.

Annual Program Plan

(See also **Standard 1 Internal Structure** for related content/samples)

Annually, the DSMES 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 or CQI.) 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 DSMES 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 should be documentation of a CQI plan/process. (e. g. written policy, annual program plan, CQI meeting minutes).
- There should be documentation of at least one project following the quality improvement plan.
- There should be evidence of application of the results of the quality improvement project to the DSMES upon completion.
- These documents should be available to your accrediting education agency at any time.

Samples of the above content can be found in the Appendix.

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 DSMES 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 and or Chronic Complications/Problem Solving
- Risk Reduction
- 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-Performed Foot Exam

Initial Site Visit

Any agency interested in becoming a DSMES Program Site will participate in an Initial Site Visit facilitated by the Department .

The purpose of the Initial Site Visit is to review components and guidelines of the DSMES Program and answer specific questions concerning program development, delivery, and evaluation. The site will identify the prospective DSMES 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 Department Professional Diabetes Educator Program (PDEP) Training.

Department Site Visit

The Department staff will conduct visits at DSMES Program sites on an as needed basis.

The Department 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.

Quality Assurance

Since the DSMES Program is reimbursed by third-party payers, the Department 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 all payers, including Medicare, program sites must achieve and maintain ADA or AADE Education Recognition Program status. Both the DSMES Program and ADA or AADE Education Recognition Programs are based on the most recent *National Standards for Diabetes Self-Management Education and Support*.

As of October 1, 2005, all DSMES Programs are required to attain and maintain ADA or AADE Education Recognition Program status to be considered certified DSMES programs. The Department requires DSMES sites file copies of all materials supporting Education Recognition with the Department .

Copies of any materials sent to accreditation agencies are to be sent to the Department at the same time and include but are not limited to:

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

Throughout each year, the Department 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 or current year.

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

The site is required to notify the Department of loss of Education Recognition status immediately and schedule a meeting of the Department staff and the Advisory or DSMS Committee within 30 days to review deficiencies, address the issues, and develop a plan to address these issues. The Department will provide technical assistance as appropriate to reinstate DSMES Program and Education Recognition Program status. DSMES Program status will be reinstated when Education Recognition Program status is reinstated. 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, the Department or payers arise. Materials that should be included in the binder(s) are: Education Recognition application, annual status reports, CQI plan, Annual Program Plan,

minutes of Advisory/DSMS committee meetings, coordinator's job description and CV/resume', instructors' continuing education records, copies of CDE certificates, CDR cards and licenses, curriculum, participant data and outcome reports, de-identified patient profile etc. Should any questions arise surrounding your audit please contact the Department .

DSMES Letter of Understanding

The DSMES Letter of Understanding (LOU) is a formal agreement that describes the responsibilities of the program site and the Department in presenting the DSMES Program. The DSMES Letter of Understanding is reviewed, completed, signed and returned to the Department by January 31st of each year. The Maine Department of Health and Human Services (DHHS) Legal Counsel and the Commissioner's office reviews, approves, and authorizes the Maine CDC Division of Disease Prevention Director to sign the final LOU. The Department will scan an electronic copy for records, and return the original signed document to the institution. See 'DSMES Letter of Understanding' in the Appendix.

Professional Diabetes Educator Program (PDEP) Training

The Department will offer the Professional Diabetes Educator Program (PDEP) Training for any institution in Maine with active/current ADA or AADE Education Recognition Program. If a PDEP training is not scheduled to be held then other online training content can be offered to the new staff educators. The Department will email training notifications to all currently recognized DSMES program on the Department registry; i.e. programs which have completed an annual LOU. This training is a required element for DSMES program recognition with the Department and the Maine Bureau of Insurance. Any DSMES program staff including: newly appointed/hired as a program coordinator, instructor and/or back-up instructor will be required to attend the next scheduled PDEP training following their appointment/new hire date.

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

The institution with active/current ADA or AADE Education Recognition Program is responsible for any PDEP training costs. Registration must be completed and returned to the Department by/before the current deadline provided on the program registration.

For any questions regarding the Professional Diabetes Educator Program (PDEP) Training please contact the Chronic Disease Prevention and Control Program.

DSMES Program Site (As of June 2018)

DSMES Program Site

Blue Hill Memorial Hospital
Bridgton Hospital
Cary Medical Center
Central Maine Endocrinology & Diabetes Center
Eastern Maine Medical Center
Eastport Health Care
FranklinHealth
Houlton Regional Hospital
Inland Hospital
LincolnHealth
Maine Coast Memorial Hospital
MaineGeneral Medical Center
Maine Medical Partners Diabetes and Endocrinology Center
 Scarborough
 St. Mary's – Lewiston
Maine Medical Partners Diabetes and Endocrinology Center
 Pediatric Specialty Care/Endocrinology & Diabetes
Mayo Regional Hospital
Mid Coast Hospital
Millinocket Regional Hospital
Mount Desert Island Hospital
Northern Maine Medical Center
Pen Bay Medical Center
 Waldo County General Hospital
Redington-Fairview General Hospital
St. Joseph Hospital
Stephens Memorial Hospital
The Aroostook Medical Center
The Mattina R. Proctor Diabetes Center at Mercy
York Hospital

Introduction to the Curriculum

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

A written curriculum reflecting current evidence and practice guidelines, with criteria for evaluating outcomes, will serve as the framework for the provision of DSMES. 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. DSMES 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 DSMES 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 and support (DSMES) 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.

DSMES 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 DSMES 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 DSMES 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 goal 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 DSMES 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 Committee, 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 DSMES 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. DSMES Programs may also add other pertinent learning objectives that are not listed with this curriculum. DSMES 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 DSMES 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 (DSMES) is the ongoing process of facilitating the knowledge, skill and ability necessary for diabetes self-care. The overall objectives of DSMES 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 DSMES 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. DSMES 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 DSMES 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 DSMES Program team use only the materials listed. Additional or different resources may be added to the curriculum by the team. The DSMES 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 DSMES Program team, together with the advisory/oversight committee, needs to review and approve all materials used for the DSMES 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 DSMES Program. Instructors are encouraged to contact other DSMES 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 DSMES 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 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 DSMES 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.

Language interpreters can be secured for persons with hearing impairment for one-to-one as well as group sessions associated with the DSMES Program. All facilities used for the DSMES 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* (most recent edition).

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 DSMES 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 DSMES.

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
- Future Visualization
 - *If you achieve your goals, what will your life look like in 5 years?*
- 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 *DSMES Program Manual* is written for the DSMES 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/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 DSMES 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 the first and last thing said in a class best.

- 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 DSMES 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 or 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 DSMES Program team for education include:

- Peers
- DSMES Program Manual and Curriculum
- Other curricula (See *Appendix*)
- AADE Standards of Practice (See *Appendix*)
- National Standards for Diabetes Self-Management Education and Support (See *Appendix*)

Resources for Educators:

- ❑ American Association of Diabetes Educators, The Art and Science of Diabetes Self-Management Education Desk Reference, 4th Edition. AADE, 2017.
- ❑ American Association of Diabetes Educators. Continuous Quality Improvement for Diabetes Education and Support Programs, 3rd ed., 2015.
- ❑ American Diabetes Association. Standards of Medical Care in Diabetes, 2018.
- ❑ Beaser, R.. Joslin's Diabetes Deskbook: A Guide for Primary Care Providers. 3rd ed. 2014.
- ❑ Codario, R.A. Type 2 Diabetes, Pre-Diabetes, and the Metabolic Syndrome. 2nd ed., 2011.
- ❑ Lorig, Kate et al. Living a Healthy Life with Chronic Conditions. 4th ed., 2012.

Disease Process & Treatment

Learning Objective	Content	Potential Tools (check off materials used)
<p>Define what diabetes is in his/her own words.</p> <p>State that diabetes is a lifelong condition.</p> <p>State that the pancreas is the body organ that makes insulin.</p>	<p>I. Understanding diabetes</p> <p>A. Introduction</p> <ol style="list-style-type: none"> 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 <p>B. Normal food metabolism</p> <ol style="list-style-type: none"> 1. Food consumed changes to glucose during digestion 2. Incretin is released from the gut and stimulates insulin release and suppression of glucagon and decreased gastric emptying 3. Glucose absorbed through the stomach and the small intestines 4. Glucose enters blood 5. Glucose carried in blood to all parts of body 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 into the cells 	<p>Videos, models, handouts/visuals, discussion/whiteboard/ overhead, as appropriate, such as those listed below.</p> <ul style="list-style-type: none"> ○ Review learning objectives. ○ _____ ○ Video: ○ <i>The Game Plan</i> ○ <i>The Diabetes Home Video Guide</i> (select portions) ○ _____ ○ Model: ○ <i>Body Apron</i> ○ <i>Digestive Tract</i> ○ _____ ○ Discussion: ○ <i>What is diabetes?</i> ○ _____

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<p>State that diabetes can affect the action of insulin in the body and its effect on the utilization of food.</p> <p>Define insulin resistance in his/her own words.</p>	<p>9. Glucose provides the energy the body needs 10. A person without diabetes maintains blood glucose in a “normal” range no matter what they eat</p> <p>C. Food metabolism with diabetes</p> <ol style="list-style-type: none"> 1. Glucose reaches the blood same as people without diabetes. 2. Glucose stays in the blood because it is not getting into the body cells. <ol style="list-style-type: none"> a. Not enough insulin b. Insulin is not working well at the receptor sites on the cells due to insulin resistance. c. Incretins not released in a timely manner d. Amylin is delayed, gastric emptying is not delayed and glucagon is not suppressed. e. Delay in insulin release. 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 above 180mg/dl <p>D. Effect of insulin</p> <ol style="list-style-type: none"> 1. Allows movement of glucose from blood into cells 2. Stimulates storage of glucose in the liver 3. Inhibits the breakdown of stored glucose in the liver 4. Promotes conversion of foods to fat tissue 5. Inhibits the breakdown of fat tissue 	<ul style="list-style-type: none"> ○ Handout(s): ○ <i>Pancreas</i> ○ _____ <ul style="list-style-type: none"> ○ Model: ○ <i>Insulin Sphere</i> ○ _____ <ul style="list-style-type: none"> ○ Handouts: ○ <i>Normal Glucose Metabolism</i> ○ <i>Glucose Metabolism in Diabetes</i> ○ <i>How Insulin Works</i> ○ _____
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Disease Process & Treatment

<p>State the type of diabetes s/he has.</p> <p>State the differences between type 1, type 2, and gestational diabetes.</p>	<p>6. Stimulates protein synthesis 7. Inhibits the conversion of protein to glucose</p> <p>II. Types of diabetes</p> <p>A. Type 1</p> <p>1. Characteristics</p> <ol style="list-style-type: none"> Approximately 10% of people with diabetes May be any age, but usually diagnosed before age 30 Rapid onset of symptoms at younger ages, may appear more gradually with age Weight loss Low or absent endogenous insulin Risk for ketoacidosis <p>2. Etiology</p> <ol style="list-style-type: none"> Partially genetic, but no clear pattern of inheritance HLA (human leukocyte antigen) genetic markers present Thought to be autoimmune disease with genetic or environmental trigger. Immune-mediated diabetes mellitus: <ol style="list-style-type: none"> Cellular mediated autoimmune Destruction of the beta cells of the pancreas Idiopathic diabetes mellitus: refers to rare forms of the disease that have no known etiology <p>B. Type 2</p>	<p>○ _____</p> <p>○ Handout: ○ <i>Four Steps to Control Your Diabetes for Life</i> ○ _____</p> <p>○ Discussion: ○ <i>What type of diabetes do you have?</i> ○ _____ ○ _____</p> <p>○ Handout: ○ <i>Type 1 Diabetes and You</i> ○ _____</p> <p>○ Handout: ○ <i>Type 2 Diabetes and You</i> ○ _____</p>
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	<ol style="list-style-type: none"> 1. Characteristics <ol style="list-style-type: none"> a. Approximately 90% or more of people with diabetes 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 initially the primary problem 2. Etiology <ol style="list-style-type: none"> a. Thought to have genetic basis b. Insulin resistance affected by obesity and lifestyle <p>C. Gestational</p> <ol style="list-style-type: none"> 1. Characteristics <ol style="list-style-type: none"> a. 7% of pregnant population b. Identified at 24-28 weeks gestation, however may develop later in pregnancy c. Increased risk for developing type 2 diabetes within 10 years of GDM d. Associated with increased risk of neonatal morbidity 2. Etiology <ol style="list-style-type: none"> a. Increase in hormones increases insulin resistance b. Abnormal utilization of maternal nutrients 	<ul style="list-style-type: none"> ○ <i>Handout:</i> ○ <i>Give blood glucose targets for gestational diabetes</i> ○ _____
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Disease Process & Treatment

<p>State the signs and symptoms of diabetes.</p>	<p>D. Prediabetes</p> <ol style="list-style-type: none"> 1. Characteristics <ol style="list-style-type: none"> a. Blood glucose higher than normal but not high enough to be diagnosed with diabetes b. Metabolic stage intermediate between normal glucose homeostasis and diabetes. c. Risk factor for future type 2 diabetes and cardiovascular disease d. Some evidence suggests complications are already beginning during prediabetes e. Associated with insulin resistance syndrome f. Staying at healthy weight, being physically active are primary prevention g. Some diabetes medicines may lower the chance of developing diabetes for people with prediabetes III. Signs and symptoms of high blood sugar (may vary from person to person) <ol style="list-style-type: none"> A. <u>No symptoms</u>: Many people with type 2 diabetes feel no symptoms when their blood glucose is high B. <u>Polyuria</u>: Excessive urination to eliminate glucose. C. <u>Polydipsia</u>: Increased thirst, to correct dehydration D. <u>Polyphagia</u>: Increased hunger, cells are not getting glucose and signal that they need energy E. <u>Weight Loss</u>: Cells are not nourished; the body uses alternative sources for energy; the body is also losing water F. <u>Blurred Vision</u>: Results from changes in hydration 	<ul style="list-style-type: none"> ○ <i>DDP clinical trials (Diabetes Prevention Program Research Group, N England Journal of Medicine 2002; 346:393-403)</i> ○ _____ ○ <i>Emphasize not everyone gets all symptoms</i> ○ _____ ○ Discussion: ○ <i>Have you experienced any of these symptoms? What did they feel like?</i>
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Disease Process & Treatment

<p>List factors that contribute to the development of diabetes.</p>	<p>of crystalline lens. This effect is temporary.</p> <p>G. <u>Slow Healing</u>: Immune system not working effectively, therefore may decrease the overall ability to fight infection</p> <p>H. <u>Fatigue</u>: Glucose is not being efficiently used for cell energy</p> <p>IV. Risk factors for developing diabetes</p> <p>A. Type 1</p> <ol style="list-style-type: none"> 1. Genetic marker (HLA) 2. Anti-insulin or anti-islet cell antibodies (ICA) 3. Possible environmental trigger <p>B. Type 2</p> <ol style="list-style-type: none"> 1. Obesity 2. Over 30 years of age, but increased prevalence in youth 3. Family history of diabetes 4. High risk groups: American Indian and Alaska Native, Hispanic-American, Asian-American, African-American 5. History of prediabetes 6. History of gestational diabetes or gestational carbohydrate intolerance 7. History of newborns weighing >9 pounds <p>V. Diagnosis of Diabetes</p> <p>A. Screening recommendations</p> <ol style="list-style-type: none"> a. Age 45 and above and if normal, repeat testing at three-year intervals 2. Test at younger age if at risk for development of diabetes if person has 	<ul style="list-style-type: none"> ○ Handout: ○ <i>Could You Have Diabetes and Not Know It?</i> ○ _____ <ul style="list-style-type: none"> ○ Discussion: ○ <i>Do you have any of these risk factors?</i> ○ <i>Does anyone else in your family have any of these risk factors?</i> ○ _____
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Disease Process & Treatment

<p>State how diabetes is diagnosed.</p>	<p>identified risk factors</p> <p>B. American Diabetes Association criteria for diagnosis of diabetes in non-pregnant adults (2018 Standards of Medical Care for Diabetes)</p> <ol style="list-style-type: none"> 1. A fasting plasma glucose (FPG) value ≥ 126 mg/dl confirmed by repeat testing on a different day 2. A casual plasma glucose (taken at any time of the day) ≥ 200mg/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 sample 4. A1C > 6.5 <p>C. Oral Glucose Tolerance Test (OGTT)</p> <ol style="list-style-type: none"> 1. Procedure <ol style="list-style-type: none"> 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 <p>VI. Diagnosis of Prediabetes</p> <ol style="list-style-type: none"> 1. Fasting plasma glucose 100-125 mg/dl 2. Two-hour plasma glucose sample 140-200mg/dl 3. A1C 5.7 – 6.4 <p>VII. American Diabetes Association goals for non-</p>	<ul style="list-style-type: none"> ○ Discussion: ○ <i>How did you learn you had diabetes?</i> ○ _____
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Disease Process & Treatment

<p>State the recommended blood glucose goals.</p>	<p>pregnant adults (taken from <i>2018 Medical Standards</i>)</p> <p>A. A1C Goal</p> <ol style="list-style-type: none"> 1. <7.0% (53mmol/mol)* <p>B. Preprandial capillary plasma glucose Goal</p> <ol style="list-style-type: none"> 1. 80-130mg/dL* (4.4 – 7.2 mmol/L) <p>C. Peak postprandial capillary plasma glucose Goal</p> <ol style="list-style-type: none"> 1. <180 mg/dL* (10.0mmol/L) <p>D. *More or less stringent glycemic goals may be appropriate for individual patients. Goals should be individualized based on duration of diabetes, age/life expectancy, comorbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations.</p> <p>E. Postprandial glucose (see 'C') may be targeted if A1C goals are not met despite reaching pre-prandial glucose goals. Postprandial glucose measurements should be made 1-2 hours after the beginning of the meal, generally peak levels in patients with diabetes.</p> <p>VIII. Components and benefits of diabetes program</p> <p>A. Include</p> <ol style="list-style-type: none"> 1. Self-care behaviors 2. Diabetes management/care plan 3. Visits with the health care team <p>B. The person with diabetes is at the center of diabetes care</p> <p>C. Benefits of participating in a diabetes education program</p> <ol style="list-style-type: none"> 1. Team resources for support 	<ul style="list-style-type: none"> ○ Handout: ○ <i>Control Your Diabetes—For Life</i> ○ _____ ○ Handout: ○ <i>Normal Blood Glucose and Insulin Levels</i> ○ _____
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Disease Process & Treatment

<p>Explain the importance of blood glucose control for reducing risks of diabetes complications.</p> <p>List the components of diabetes care.</p>	<ol style="list-style-type: none"> 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 <p>D. Self-care Behaviors</p> <ol style="list-style-type: none"> 1. AADE7™ <ol style="list-style-type: none"> a. Healthy eating b. Being active c. Monitoring d. Taking medication (if used) e. Problem-solving f. Healthy coping g. Reducing risks <p>E. Diabetes Management/Care Plan</p> <ol style="list-style-type: none"> 1. Written guide for each person with diabetes to take action for his/her diabetes care. <ol style="list-style-type: none"> a. It may include the meal, physical activity, monitoring, medication and other plans b. The diabetes care team, including the person with diabetes, makes this plan together c. The plan is based on the individual's needs and will change over time 2. Meal plan <ol style="list-style-type: none"> a. Appropriate amounts of carbohydrate (CHO), protein, and fat provided through a meal plan designed especially for the 	<ul style="list-style-type: none"> ○ Discussion: ○ Have participants write down their blood glucose goals. ○ _____ <ul style="list-style-type: none"> ○ Discussion: ○ What self-care practices are you doing now? ○ _____
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Disease Process & Treatment

	<p>individual</p> <ul style="list-style-type: none"> 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 <p>3. Physical activity plan</p> <ul style="list-style-type: none"> 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 d. Consistent physical activity at a comfortable level is the aim <p>4. Monitoring plan</p> <ul style="list-style-type: none"> a. Blood glucose records help the person with diabetes and the health care team make changes for blood sugar control <p>5. Medication</p> <ul style="list-style-type: none"> a. Helps with increasing available insulin or decreasing insulin resistance b. Insulin works to lower blood glucose. 	<ul style="list-style-type: none"> ○ Handout: ○ AADE7™ ○ _____ <p>Discussion:</p> <p><i>What is your current:</i></p> <ul style="list-style-type: none"> ○ <i>diabetes care plan?</i> ○ <i>meal plan?</i> ○ <i>physical activity plan?</i> ○ <i>medication plan?</i> ○ _____ <ul style="list-style-type: none"> ○ Handout: ○ <i>Diabetes Management/Care Plan</i> ○ _____
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Disease Process & Treatment

	<p>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</p> <ul style="list-style-type: none"> c. Oral glucose lowering medications stimulate the pancreas to produce more insulin, increase sensitivity to insulin, alter release of excess glucose from the liver, alter the ability to absorb carbohydrates, or alter urinary excretion of glucose from kidney <ul style="list-style-type: none"> 6. Other plans <ul style="list-style-type: none"> a. Lowering risks for health problems b. Coping c. Problem solving 7. Balancing diabetes care plan <ul style="list-style-type: none"> 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 <p>F. Visits with the health care team</p> <ul style="list-style-type: none"> 1. Assistance with planning <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> a. Physical examination b. Foot exam 	
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Disease Process & Treatment

<p>State the relationship of food, activity, medications (if used) to blood glucose levels.</p>	<ul style="list-style-type: none"> c. Eye exam d. Dental exam e. A1C f. Other blood tests g. Urine tests h. Immunizations i. Adjusting diabetes management/care plan j. High blood pressure k. High blood lipids l. Depression m. Contraception n. Tobacco/alcohol/ drug cessation <p>IX. The care team and resources</p> <p>A. Individual's responsibility in diabetes care</p> <ol style="list-style-type: none"> 1. Make regular, planned follow-up appointments with educators and clinicians 2. Keep appointments—preventive and illness 3. Bring monitoring records to appointments 4. Describe symptoms 5. Ask questions if not understanding; discuss problems, 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 10. Opportunities for ongoing education and information <ol style="list-style-type: none"> a. Talk with people with diabetes 	<ul style="list-style-type: none"> ○ Discussion: ○ <i>How often do you see your health care team? What happens during your visit(s)?</i> ○ _____ ○ Handout: ○ <i>My Personal Care Card</i> ○ _____ ○ <i>Community resource list</i> ○ _____
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Disease Process & Treatment

<p>Describe his/her responsibility in care and how to use the health care and support system to meet care needs.</p> <p>State ways s/he can participate in life-long learning about diabetes.</p>	<ul style="list-style-type: none"> b. Talk with a diabetes educator c. Read about diabetes d. Visit internet sites e. Watch diabetes videos f. Attend diabetes education classes g. Attend diabetes support group h. Attend community diabetes events <p>11.Understands standards of care and clinical practice recommendations and communicate with your health care team about them</p> <p>12.Know your medical resources</p> <ul style="list-style-type: none"> a. Physician office b. Family/friend c. Neighbor d. Rescue e. Call button (ex. LifeAlert) <p>13.Carry identification regarding diabetes</p> <p>B. Health care team</p> <ol style="list-style-type: none"> 1. May include 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, community health worker etc. 2. Provides appropriate information and guidance 3. Mutually sets and agrees upon behavior change goals with individual <p>C. Ensuring access to care</p> <ol style="list-style-type: none"> 1. Legislation 	<ul style="list-style-type: none"> ○ Discussion: ○ <i>What are some of your responsibilities in your diabetes care?</i> ○ _____ ○ Role play: ○ <i>Communication with health care team</i> ○ _____ ○ Discussion: ○ <i>What are some of the learning resources you use?</i> ○ _____ ○ Handout: ○ <i>Diabetes Resource List</i> ○ <i>My Personal Care Card</i> ○ <i>Clinical Practice Recommendations</i> ○ _____
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Disease Process & Treatment

Identify issues of self-	<ul style="list-style-type: none"> 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 2. Discrimination <ul style="list-style-type: none"> a. Health insurance b. Employment c. Contact ADA Affiliate for legal advice 3. Reimbursement <ul style="list-style-type: none"> a. Check for insurance carrier to determine coverage for diabetes education, 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 <ul style="list-style-type: none"> 1. Community diabetes resources <ul style="list-style-type: none"> a. Local DSMES Program b. American Diabetes Association Affiliate c. Maine CDC, Chronic Disease Prevention and Control Program d. Diabetes Support Groups 2. Other community resources <ul style="list-style-type: none"> a. Weight management programs b. Exercise programs/facilities c. Community libraries 	<ul style="list-style-type: none"> ○ Handout: ○ <i>My Local Emergency Numbers</i> ○ <i>Diabetes Identification Resources</i> ○ <i>Local Legislators Resource List</i> ○ _____ ○ Discussion: ○ <i>Discuss where to post emergency information at home.</i> ○ _____ ○ Discussion: ○ <i>What are some of your health care team's responsibilities in your diabetes care?</i> ○ _____ ○ Handout: ○ <i>Internet Resource List</i> ○ <i>Publications Resource List</i>
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Disease Process & Treatment

<p>advocacy in dealing with legislation, insurance, the health care system, employment, and other related issues.</p>	<ul style="list-style-type: none"> 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 n. Medication assistance programs <p>3. Print and media resources for diabetes management</p> <ul style="list-style-type: none"> a. Magazines (See <i>Appendix</i>) b. Reference books c. Videos d. Audiotapes e. Cookbooks f. Internet (See <i>Appendix</i>) g. Companies that manufacture and sell diabetes supplies 	<ul style="list-style-type: none"> ○ <i>Organizations Resource List</i> ○ <i>Medicare/Medicaid Reimbursement Information</i> ○ _____ ○ Discussion: ○ <i>Share any legislative efforts you're involved in</i> ○ _____ ○ Role play: ○ <i>Calling legislator with questions/concerns</i> ○ <i>Applying for a job or driver's license</i> ○ _____ ○ Discussion: ○ <i>Wellness, social, information, and economic resources and how to access as appropriate.</i>
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Disease Process & Treatment

Behavioral Objectives	Instructor's Notes
<p>Make a plan for one thing s/he will do for diabetes care.</p> <p>Make a plan for one-way s/he will participate in lifelong learning about diabetes.</p>	<p>Review behavioral objectives.</p> <p>Making changes, such as taking care of diabetes and lifelong learning about diabetes, is easier when a person:</p> <ul style="list-style-type: none"> • Gathers information • Makes plans • Breaks plans down into small steps <p>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.</p> <p>Handout: <i>Personal Goal(s)/Behavior Change Plan</i></p> <p>Review Tab 9: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p>

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, 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 any feelings and stress.

Behavioral Objectives

Make a plan for one way he/she will respond in a healthy way with 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

Handouts/Visuals:

Relaxation Techniques on Health – What You Need to Know ([NIH](#))

Stress Management ([Mayo Clinic](#))

Healthy Coping ([AADE](#))

Coping With Stress At Work ([APA](#))

Know Your Rights ([ADA](#))

Website Links for Information on Diabetes:

[American Psychiatric Association](#)

[Depression and Bipolar Support Alliance](#)

[National Alliance for Mentally Ill \(NAMI\)](#)

[National Institute of Mental Health \(NIMH\)](#)

[Mental Health America](#)

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Addressing Psychosocial Concerns

Learning Objective	Content	Instructor's Notes (check off materials used)
<p>Verbalize that s/he has diabetes.</p> <p>Identify experiences, successes and problems living with diabetes.</p> <p>Identify his/her feelings related to diabetes.</p>	<p>I. Introduction</p> <p>A. Review diabetes self-care behaviors, including adjustment to living with diabetes</p> <p>B. Lifestyle adjustment</p> <p>1. Participant discussion of changes that have occurred as a result of having diabetes</p> <p>a. Feelings about having diabetes</p> <p>b. Changes in daily routine</p> <p>c. Changes in activity</p> <p>d. Time spent on diabetes</p> <p>e. Changes in personal health</p> <p>f. Changes in relationships</p> <p>g. Effect of diagnosis on family/friends</p> <p>h. Changes at work</p> <p>C. Living with a chronic disease</p> <p>1. Feelings related to diabetes</p> <p>a. Feelings are normal and okay</p> <p>b. Feelings will change</p> <p>c. Feelings part of process of accepting diabetes</p>	<p>○ Review learning objectives.</p> <p>○ _____</p> <p>○ Discussion:</p> <p>○ <i>What changed in your life after you learned you had diabetes?</i></p> <p>○ _____</p> <p>○ DVD or video:</p> <p>○ <i>Emotional Aspects of Diabetes</i></p> <p>○ _____</p>

Addressing Psychosocial Concerns

<p>Identify the potential coexistence of depression in people with diabetes.</p>	<p>d. Range of feelings about having diabetes e. Feelings about diabetes may vary as diabetes becomes part of life</p> <p>II. Identification of Depression</p> <p>A. Symptoms may include:</p> <ol style="list-style-type: none"> 1. Persistent sad, anxious, or “empty” mood for longer than 2 weeks 2. Feelings of hopelessness, pessimism 3. Feelings of guilt, worthlessness, helplessness 4. Loss of interest or pleasure in hobbies and activities that were once enjoyed, including sex 5. Decreased energy, fatigue, being “slowed down” 6. Difficulty concentrating, remembering, making decisions 7. Insomnia, early-morning awakening, or oversleeping 8. Appetite and/or weight changes 9. Restlessness or irritability 10. Thoughts of death or suicide, or suicide attempts <p>B. Seek an evaluation for depression as needed. People overwhelmed with sadness should tell a friend, family member, or health care worker. If patient has thoughts of hurting self or others call 911, physician or emergency room.</p>	<p>○ Handout: ○ <i>Diabetes Concerns Assessment Form</i> ○ _____</p> <p>○ Discussion: ○ <i>How did/do you feel when you were told you had diabetes?</i> ○ _____</p>
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Addressing Psychosocial Concerns

<p>Identify ways diabetes affects family.</p> <p>Identify feelings and stresses family members may experience.</p>	<p>transportation assistance. Health insurance or financial need should be addressed for individuals.</p> <p>E. Effect of diabetes on the family</p> <ol style="list-style-type: none"> 1. Changes in lifestyle <ol style="list-style-type: none"> a. Medication/regimens b. Consistent decision making in daily patterns <ol style="list-style-type: none"> i. Meals ii. Physical activity iii. Sleeping iv. Sex 2. Diabetes as an opportunity for family growth <ol style="list-style-type: none"> a. Increased awareness of other family member's needs and feelings b. Family needs education to cope, understand, and be supportive. 3. Tips for enlisting support <ol style="list-style-type: none"> a. Individuals with diabetes and family members are encouraged to discuss their feelings regarding diabetes b. Individuals and their families negotiate a plan for who is responsible for each area of diabetes care c. Individuals and family members brainstorm ways to assist 	<ul style="list-style-type: none"> ○ Handouts: ○ <i>Mindful Eating</i> ○ _____ ○ Discussion: ○ <i>What are coping strategies that have been successful for you?</i> ○ _____ ○ Activity: ○ <i>Have participants identify two support people and then role play asking them for help.</i> ○ _____
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Addressing Psychosocial Concerns

<p>State in his/her own words what stress is.</p> <p>Explain the body's response to stress.</p> <p>State ways increased stress affects diabetes.</p> <p>State how self-care may be effected by chronic stress.</p> <p>Identify stressful situations/factors in his/her life.</p> <p>Explain how having a chronic disease like diabetes</p>	<p>d. Seek professional assistance as necessary</p> <p>F. Gather team for support as necessary</p> <ol style="list-style-type: none"> 1. Physician 2. Diabetes Educators 3. Endocrinologist 4. Ophthalmologist 5. Podiatrist 6. Mental Health professional 7. Other health professionals <p>IV. Stress</p> <p>A. Stress factors</p> <ol style="list-style-type: none"> 1. Physiological factors associated with stress are linked to hormonal changes causing increased blood glucose 2. Increased blood pressure 3. Physical symptoms 4. Anxiety 5. Increased heart rate 6. Increased clotting factor <p>B. Stress may cause</p> <ol style="list-style-type: none"> 1. Poor nutrition 2. Decreased physical activity 3. Decreased social activities 4. Decreased enjoyment of activities 5. Diminished self-care 6. Change in sleep patterns 7. Feelings of guilt/worthlessness/poor self- 	<ul style="list-style-type: none"> ○ Discussion: ○ <i>Have any changes in lifestyle affected relationships with family/friends?</i> ○ <i>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?</i> ○ _____ ○ Discussion: ○ <i>What are stressful situations for you?</i> ○ <i>Have you experienced any of these physical or emotional results of stress? Which ones?</i> ○ _____
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Addressing Psychosocial Concerns

<p>may contribute to stress.</p> <p>Acknowledge that a mental health counselor may help with coping with negative feelings and stress.</p> <p>Review coping mechanisms for depression. Many strategies apply to coping with stress.</p>	<div style="text-align: center;">esteem</div> <ol style="list-style-type: none"> 8. Self-destructive thoughts 9. Substance abuse 10. Depression 11. Anxiety disorder 12. Eating disorder <p>C. Sources of Stress</p> <ol style="list-style-type: none"> 1. Physical <ol style="list-style-type: none"> a. Illness b. Pain c. Infection d. Medical procedures 2. Changes in routine <ol style="list-style-type: none"> a. Having to follow schedules daily b. Having to change habits (eating, etc.) 3. Psychological <ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> ○ Discussion: ○ <i>Now that the individual has identified stress-producing situations, ask:</i> ○ <i>What can you do when stress is building?</i> ○ <i>Encourage participants to record stress reduction activities and post in their home.</i> ○ _____ ○ Handouts: ○ _____ ○ _____
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Addressing Psychosocial Concerns

Behavioral Objective	Instructor's Notes
<p>Make a plan for one way she/he will respond in a healthy way with feelings about diabetes and stress.</p>	<p>Review behavioral objectives. Review DSMES Send individual and class notes to provider.</p> <p>Making changes, such as coping with negative feelings and stress, is easier when a person:</p> <ul style="list-style-type: none"> • Gathers information • Makes plans • Breaks plans down into small steps <p>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.</p> <p>Handout: <i>Personal Goal(s)/Behavior Change Plan</i></p> <p>Review: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p>

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:

Your Management Plan (MF/Diabetescare.net)

The Need for Blood Glucose Monitoring and Record Keeping
(MF/Diabetescare.net)

Handouts/Visuals:

AADE 7™ Self-Care Behaviors (AADE)

Approaches to Motivating Behavior Change for Improved Health & Wellbeing
(ADA)

Assess Your Lifestyle (ADA)

Are You Ready? (ADA)

Sample Goals (SD)

Sample Goal Contract (SD)

Stages of Change Chart (SD)

Local Resource List (SD)

Personal Goal(s)/Behavior Change Plan (SD)

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Promoting Health & Behavior Change

Learning Objective	Content	Instructor's Notes (check off materials used)
<p>List behaviors that may need to be changed to improve health and quality of life.</p>	<p>I. Overview</p> <ul style="list-style-type: none"> 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 may 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 <p>II. Health habits that improve quality of life with diabetes</p> <ul style="list-style-type: none"> A. Well-balanced meal plan B. Regular physical activity C. Taking medication safely and as prescribed D. Regular monitoring of blood glucose E. Coping with feelings and stress in healthy ways 	<ul style="list-style-type: none"> ○ Review learning objectives. ○ _____

Promoting Health & Behavior Change

<p>Describe the stages of change.</p> <p>Identify his/her readiness to change.</p>	<p>F. Smoking cessation/reducing risks G. Preventive health care visits to providers H. Other individual habits to enhance diabetes care</p> <p>III. Stages of behavior change</p> <p>A. General</p> <ol style="list-style-type: none"> 1. May be at different stages for different habits 2. May want to work on changes that one is ready to make 3. Can learn effective strategies that may help with future changes <p>B. Stages</p> <ol style="list-style-type: none"> 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 routine <p>IV. Steps to make a change</p> <p>A. Acknowledge the need for change</p> <ol style="list-style-type: none"> 1. Must believe it is needed 	<ul style="list-style-type: none"> ○ Discussion: ○ <i>Brainstorm behavior participants wish to change to enhance diabetes care.</i> ○ <i>AADE 7™ Self-Care Behaviors</i> ○ _____
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Promoting Health & Behavior Change

<p>Describe the four steps in the process of change.</p> <p>Identify potential barrier(s) that may hinder progress toward achieving behavior change goals.</p> <p>Describe ways to maintain behavior changes.</p> <p>Describe characteristics of people who are successful with behavior change.</p>	<ol style="list-style-type: none"> 2. Deal with feelings/thoughts that get in way 3. Identify why might be resisting change <p>B. Get ready to change—physically and mentally</p> <ol style="list-style-type: none"> 1. Set goals 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 6. Role play <p>C. Take action</p> <ol style="list-style-type: none"> 1. Monitor progress 2. Change environment, if needed 3. Substitute with healthy behavior, if needed <p>D. Achieve and maintain change</p> <ol style="list-style-type: none"> 1. Use stress management strategies 2. Visit diabetes team regularly 3. Plan for relapse—revise goal 4. Reward self <p>V. Tools people may use for successful with behavior change</p> <ol style="list-style-type: none"> A. Motivation B. Hope C. Supportive friends 	<ul style="list-style-type: none"> ○ Handout: ○ <i>Stages of Change Chart</i> ○ _____
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Promoting Health & Behavior Change

<p>Identify strategies to achieve his/her behavior change goals.</p>	<p>D. Supportive health care professionals E. Realistic behavior change goals F. Develop a plan G. Participate in care</p> <p>VI. Strategies for behavior change</p> <p>A. Identify readiness to change B. Set a positively worded goal C. Keep a written record of actions and progress</p> <ol style="list-style-type: none"> 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 <p>D. Change daily routine and environment to help eliminate cues for behavior or to support new behavior—make new habit easy to remember</p> <p>E. Use reminders</p> <ol style="list-style-type: none"> 1. Calendar, cell phone, etc. <p>F. Spend time with supportive people, places and things</p> <p>G. Make plans ahead of time to handle obstacles/barriers</p> <p>H. Ask family/friends for support. Tell them how they can assist with behavior change</p> <p>I. Determine rewards for self when short-term goal is accomplished</p>	<ul style="list-style-type: none"> ○ Discussion: ○ <i>Brainstorm obstacles/aids to making and maintaining behavior changes.</i> ○ <i>Benefits of changing versus not changing behaviors.</i> ○ _____
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Identify the steps in making a behavior change plan.

Promoting Health & Behavior Change

<p>Verbalize a commitment to carry out goals.</p> <p>Identify problem-solving strategies for behavior change and maintenance.</p>	<div>measurable, achievable, realistic and time-specific</div> <ol style="list-style-type: none"> b. Effective goal 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/she feels ready to do and can do e. Learn what needs to be done to achieve goal f. Identify one goal most important to work on first g. Use checkpoints to evaluate progress <ol style="list-style-type: none"> 3. Identify aspects of goals that are difficult <ol style="list-style-type: none"> a. Prepare for obstacles and barriers 4. List the benefits and costs of taking action to reach the goal 5. Identify ways to change environment at home and work 6. Identify ways family/friends can assist 7. Ask for help 8. Identify small steps or behaviors to help reach long-term goal 9. Determine how often the behavior will be tried 	<ul style="list-style-type: none"> ○ Handout: ○ Goal Contract ○ _____
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Promoting Health & Behavior Change

	<p>10. Keep track of each time new behavior is tried</p> <p>11. Reward achievement of the new behavior</p> <p>VIII. Problem-solving if unable to achieve goal</p> <p>A. Evaluate barriers</p> <p>B. Identify obstacles</p> <p>C. Revisit the goal: was behavior change goal too large, unrealistic, not measurable, not relevant, etc.</p> <p>D. Choose a modified version of original behavioral goal or entirely new goal if indicated</p> <p>E. Reaffirm commitment and keep trying. Achievement of each small step can lead to success with achieving long-term goal</p>	
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Promoting Health & Behavior Change

Behavioral Objective	Instructor's Notes
Make an action plan for one personal health goal.	<p>Review behavioral objectives.</p> <p>Choosing goals and making behavior changes are easier when a person:</p> <ul style="list-style-type: none">• Gathers information• Makes plans• Breaks plans down into small steps <p>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.</p> <p>Handout: <i>Personal Goal(s)/Behavior Change Plan</i></p> <p>Review Tab: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p>

Nutritional Management

Introduction

The purpose of this session is to discuss nutritional management of diabetes, recognize and support healthy eating patterns and emphasize a wide variety of nutrient dense foods in proper portion sizes. Practical, achievable guidelines are important in the control of blood glucose, blood pressure and blood lipids for optimal health and prevention and/or delay of complications. It is important that any measures relating to nutritional management be discussed with the participants' physician and/or a registered dietitian prior to adopting a new diet or eating pattern.

Learning Objectives

Survival Level:

- ☐ Describe the relationship between nutrition, physical activity, and medication.
- ☐ Describe benefits of healthy eating/meal planning.
- ☐ Recognize eating and activity 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 while still maintaining the pleasure of eating.

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

Web Based:

My Food Advisor <http://tracker.diabetes.org/>

MyPlate <http://www.choosemyplate.gov>

Videos:

Your Management Plan (MF/Diabetescare.net)

A Typical Day of Eating (MF/Diabetescare.net)

How to Be a Mindful Eater (MF/Diabetescare.net)

Creating Your Meal Plan (MF/Diabetescare.net)

What is Carbohydrate Counting? (MF/Diabetescare.net)

Counting Carbohydrate Grams (MF/Diabetescare.net)

Using the Food Label (MF/Diabetescare.net)

Diabetes Basics: Create Your Plate (ADA)

How Insulin Works (MF/Diabetescare.net)

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:

Borushek, Allan. Calorie King. 2015. *(also available via Kindle)*

American Diabetes Association. Month of Meals Diabetes Meal Planner. 2010.

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

Mr. Food Test Kitchen. Hello Taste, Goodbye Guilt! Over 150 Healthy & Diabetes Friendly Recipes. American Diabetes Association. 2013.

Holzmeister, L. A. The Diabetes Carbohydrate and Fat Gram Guide 4th Edition. American Diabetes Association. 2010.

Holzmeister, L.A. The Ultimate Calorie, Carb and Fat Gram Counter 4th Edition. American Diabetes Association. 2010.

Franz, M.J.; Evert A.B. American Diabetes Association Guide to Nutrition Therapy for Diabetes 2nd Edition. 2012.

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

Warshaw, H; Kulkarni, K. The Complete Guide to Carb Counting 3rd Edition. American Diabetes Association, 2011.

Warshaw, H. Eat Out, Eat Well. American Diabetes Association. 2015.

Booklets/Handouts:

Count Your Carbs (AND)

First Step in Diabetes Meal Planning (ADA)

Healthy Food Choices (ADA)

Idaho Plate Method (www.platemethod.com)

Month of Meals (ADA)

Gluten-Free Basics (AND)

Choose Your Foods: Food Lists for Diabetes (AND)

Ready, Set, Start Counting! (www.dce.org/publications/education-handouts/ / AND)

Sweet Taste Without the Calories (www.dce.org/publications/education-handouts/ / AND)

Create Your Plate: An Easy Way to Eat Well (ADA)

My Game Plan: Food and Activity Tracker (ADA)

Protect Your Heart: Plan and Cook Heart-Healthy Meals (ADA)

Handouts/Visuals:

Carb Card (www.carbcards.com)

Dietary Guidelines for Americans (www.choosemyplate.gov)

Fast Food Guide ([PC](#))

Feelings Cards ([SD](#))
 Food Label ([FDA](#))
 Food Record (LWD, SD)
 Helping Hands ([BYLD Curriculum](#))
 How Insulin Works (LWD; also see 'Video' section)
 Local Resource List (SD)
 Meal Planning Resources (SD)
 Mindful Eating Activity ([The Last Orange on Earth](#))
 My Personal Diabetes Care Card (NDEP, ADA, SD)
 MyPlate (www.choosemyplate.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 (www.choosemyplate.gov)
 Read It Before You Eat It (www.fns.gov)
 Self-Blood Glucose Monitoring Record Book (PC, SD)
 Serving Size Guide ([www.mealsmatter.org/Eating for Health/Topics/Healthy-Living-Articles/Portion-Sizes.aspx](http://www.mealsmatter.org/Eating%20for%20Health/Topics/Healthy-Living-Articles/Portion-Sizes.aspx))
 Diabetes Superfoods (AND)
 Holiday Meal Planning (AND)
 A Mediterranean Meal Plan (AND)
 Self-Care Behaviors Handouts (AADE)

AADE= American Association of Diabetes Educators **ADA**= American Diabetes Association
AND= Academy of Nutrition and Dietetics **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

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
Describe feelings regarding following a meal plan.	<p>I. Introduction</p> <ul style="list-style-type: none"> 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 <p>II. Lifestyle adjustment</p> <ul style="list-style-type: none"> A. Participant discussion of current eating behaviors <ul style="list-style-type: none"> 1. Why does participant eat what they are now eating? 2. What types of habits do participants now have? B. Participant discussion of feelings that have occurred as a result of changes in food intake <ul style="list-style-type: none"> 1. Feelings about following a meal plan 2. Changes in daily routine regarding eating 	<ul style="list-style-type: none"> ○ Review learning objectives. ○ _____ ○ Videos, models, handouts/visuals, computer presentations, discussion/whiteboard/overhead, as appropriate, such as those listed below. ○ Discussion: ○ <i>Ask participants to share how it feels to follow a meal plan</i> ○ <i>Ask participants to share what eating is like now that they have diabetes.</i> ○ <i>Ask participants to brainstorm coping strategies for difficult food-related situations.</i>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
Describe the relationship between nutrition, physical activity and medication.	<p>3. Effect of meal plan in relation to family and friends</p> <p>4. How to maintain pleasure of eating and only limiting food choices when necessary</p> <p>C. Feelings are normal and okay</p> <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> a. Buddy b. Support group c. Counselor/diabetes educator d. Registered dietitian <p>III. Achievement of target blood glucose goals depends on balance of nutrition, physical activity and medication</p> <p>A. Meal planning provides appropriate food in amounts and at intervals that will balance medication and physical activity to maintain target blood glucose levels</p> <ol style="list-style-type: none"> 1. Too much food can result in increased blood glucose (hyperglycemia) 2. Too little food can result in decreased blood glucose (hypoglycemia) <p>B. Physical activity</p>	<p>○ _____</p> <p>Discussion: <i>Ask participants to identify resources for support.</i></p> <p>○ _____</p> <p>○ Video: <i>A Typical Day of Eating</i></p> <p>○ _____</p> <p>○ Handout/Visual:</p> <ul style="list-style-type: none"> ○ <i>Normal Glucose Metabolism</i> ○ <i>Diabetes Basics: Create Your Plate (ADA)</i> ○ _____ <p>○ Discussion:</p> <p>○ <i>Discuss how circulating</i></p>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<ol style="list-style-type: none"> 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) <p>C. Medication</p> <ol style="list-style-type: none"> 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) <p>D. Nutrition as therapy</p> <ol style="list-style-type: none"> 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 individual nutritional needs, taking into consideration personal and cultural preferences and lifestyle while respecting the individual's wishes and willingness to change and maintain the pleasure of eating <p>IV. Benefits of Healthy Eating/M meal Planning</p> <p>A. Achieve nutrition goals</p> <ol style="list-style-type: none"> 1. Maintain blood glucose as near normal as 	<p><i>glucose (digested food) needs the help of medication and physical activity to get into cell.</i></p> <p>○ _____</p>

2019 Edition

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
<p>glucose, blood pressure, and blood lipids.</p> <p>Identify healthy eating behaviors.</p>	<p>time the more insulin is needed</p> <p>b. Eating approximately the same meal and snacks aids achievement of stable blood glucose</p> <p>c. Skipping meals contributes to erratic blood glucose levels</p> <p>C. Eating regular meals and snacks/ timing of food intake and medication</p> <p>1. Meals and snacks should be eaten at about the same time every day</p> <p>2. Meals and snacks should be spaced evenly throughout the day</p> <p>3. Optimum blood glucose levels can result if medication is timed appropriately to match food intake</p> <p>D. Eating a variety of food</p> <p>E. Eating more high-fiber food</p> <p>F. Drinking more water</p> <p>G. Eating less high-fat food</p> <p>H. Eating less high-sugar food</p> <p>I. Eating less fast food</p> <p>VI. Nutrition goals for individuals with diabetes</p> <p>A. Goals for type 1</p> <p>1. Conventional therapy</p> <p>a. Synchronize food with insulin</p> <p>b. Eat consistently, adjust insulin</p> <p>2. Intensive therapy</p> <p>a. Integrate insulin into lifestyle</p>	<p>○ Handouts: <i>How Insulin Works, Normal Glucose and Insulin Levels, Dietary Guidelines for Americans, MyPlate</i></p> <p>○ _____</p> <p>○ Video: <i>Your Management Plan, Creating Your Meal Plan</i></p>

2019 Edition

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
<p>Explain the dietary concepts of macro nutrients (carbohydrate, protein, fat) and food groups.</p>	<ol style="list-style-type: none"> 1. Nutrients that provide calories are CHO, PRO, FAT 2. Vitamins, minerals and water are essential for life but do not provide calories nor effect blood glucose C. Carbohydrate <ol style="list-style-type: none"> 1. Monitoring of intake provides critical glycemic control 2. Starch and sugar 3. Body uses CHO for energy and needs more of this than any other nutrient 4. Foods containing CHO <ol style="list-style-type: none"> a. Starches – breads, cereals, pasta, rice b. Fruits c. Vegetables d. Milk 5. Individualized CHO Intake <ol style="list-style-type: none"> a. Percentage of calories from CHO is individualized <ol style="list-style-type: none"> i. Based on individual's eating habits ii. Based on glucose level goals iii. Based on lipid level goals iv. Based on available insulin 6. Fiber <ol style="list-style-type: none"> a. At a minimum, people with diabetes should consume the recommended amount of fiber & whole grains for the general public D. Protein <ol style="list-style-type: none"> 1. Protein breaks down into amino acids, some 	<p><i>glucose, lipid and blood pressure; ask how they keep track of these levels.</i></p> <ul style="list-style-type: none"> ○ <i>Ask participants to brainstorm reasons to eat well and control their glucose, lipids, and blood pressure.</i> ○ _____ ○ <i>Handouts: SBGM Record Book, My Personal Diabetes Care Card</i> ○ _____ ○ Models: ○ <i>Food Models/Samples, Food Servings and Portions</i>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<p>of which are converted to glucose, if needed</p> <ol style="list-style-type: none"> 2. Body uses protein to build and repair muscles, skin and every cell in body 3. Foods containing protein <ol style="list-style-type: none"> a. Meat, fish, eggs, poultry b. Peanut butter c. Cheese d. Milk e. Tofu 4. Moderate protein intake <ol style="list-style-type: none"> 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. Intake should be individualized d. Those with no evidence of kidney disease: no higher risk for CVD e. Those with kidney disease: reducing protein intake not recommended f. Carbohydrate sources high in protein should be avoided for those with Type 2 due to potential for increased insulin response without increase plasma glucose E. Fat <ol style="list-style-type: none"> 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 	<p><i>(Actual or Photo), Measuring Tools (measuring cups, food scale etc., Tubes of Fat/Sugar</i></p> <ul style="list-style-type: none"> ○ _____ ○ Discussion: ○ <i>Using food models or actual products, ask participant to determine whether the food is primarily carbohydrate, protein, fat, or a combination of nutrients.</i> ○ Discussion: <i>Foods that are</i>

2019 Edition

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
Identify tools for healthy	<p>1. Recommendation same as general population – reduce sodium intake to less than 2300mg/day</p> <p>VIII. Tools for Healthy Eating - An individualized meal plan option for each participant is determined after a nutrition assessment by the dietitian</p> <p>A. MyPlate</p> <ol style="list-style-type: none"> 1. Shows a visual representation of the amount of fruits, vegetables, grains, meat and dairy that should be on a plate during mealtimes 2. Messages in MyPlate: <ol style="list-style-type: none"> a. Each color block represents a food group b. The size of the color block indicates the portion of the plate that should have foods from that food group 3. Also, see Idaho Plate Method <p>B. Portion Guides</p> <ol style="list-style-type: none"> 1. Measuring tools <ol style="list-style-type: none"> a. Cups, spoons, rulers and scales 2. A person's own hands <ol style="list-style-type: none"> a. Estimate healthy portions using one's own hands 3. Plate and placemat method <ol style="list-style-type: none"> a. Idaho Plate Method b. Nutrition placemat 4. Serving size guides 	<ul style="list-style-type: none"> ○ Handouts: <i>Mindful Eating, Portion Distortion, Helping Hands Serving Guide, MyPlate, Food Labels, Mediterranean Diet, DASH diet</i> ○ _____ ○ Activity: <i>Have participants "guess" the volume (measurement) of specific foods using food models or actual foods.</i> ○ _____

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
eating/meal planning.	<ul style="list-style-type: none"> a. Estimate healthy portions by using everyday objects as comparisons C. Food Label <ul style="list-style-type: none"> 1. Food label found on all food packages 2. Food label includes food facts (nutrition facts) that can help with choosing healthy portions, including: <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> a. Newly diagnosed clients with diabetes b. Clients with diabetes who need simple guidelines or tips for planning meals E. Idaho Plate Method <ul style="list-style-type: none"> 1. This approach illustrates what a low calorie, meal looks like 2. Poster contains sample meal plan; shows how much space foods should occupy on plate 3. Vegetables and fruit occupy ½ of plate, 	<ul style="list-style-type: none"> ○ Discussion: <i>Ask participants to share the details of their meal plan.</i> ○ _____

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<p>starch $\frac{1}{4}$ of plate, and protein $\frac{1}{4}$ of plate; dairy on side.</p> <p>4. Intended audience:</p> <ol style="list-style-type: none"> Clients who need simple guidelines Newly diagnosed clients <p>F. Healthy Food Choices (ADA/AND)</p> <ol style="list-style-type: none"> Simplified version of (ADA) Exchange System Does not include expanded or lengthy list of foods Useful in initial stages of diabetes education Intended audience <ol style="list-style-type: none"> Newly diagnosed clients with diabetes Clients who need simple guidelines or tips for planning meals Focuses on reducing intake of fat, salt, sugar and increasing intake of high fiber foods <p>G. Menus</p> <ol style="list-style-type: none"> The ADA, AND and others have developed specific menu cycles that can be used for type 1 or type 2 diabetes (i.e. ADA's <i>Month of Meals</i>) Menus are very specific and are generally easy to follow Designed for participants who: <ol style="list-style-type: none"> Have little experience with meal planning and do not currently have a healthy eating plan Want to be told what and when to eat Have difficulty making or limiting food 	<ul style="list-style-type: none"> ○ Discussion: ○ <i>Ask participants if they have skipped a meal and what happened.</i> ○ <i>Discuss hypoglycemia and treatment as appropriate.</i> ○ _____

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<p>choices</p> <p>H. Modified Food Records</p> <ol style="list-style-type: none"> 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 probably most appropriate for type 2 diabetes, but can also be used with people with type 1 diabetes <p>I. Exchange Lists</p> <ol style="list-style-type: none"> 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 <p>J. Counting approaches - <u>*Patient should only adapt counting approaches under physician and registered dietitian guidance*</u></p>	<ul style="list-style-type: none"> ○ Discussion: <i>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.</i> ○ _____ ○ Pamphlets: <i>First Step in Diabetes Meal Planning,</i>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<ol style="list-style-type: none"> 1. Calorie counting <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> 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/Insulin Ratios <ol style="list-style-type: none"> a. Carbohydrate/Insulin Ratios are the 	<p><i>Ready, Set, Start Counting!</i></p> <ul style="list-style-type: none"> ○ _____ ○ Activity: <i>Have group plan a meal using this method. Use for individual meal planning as appropriate.</i> ○ _____ ○ Discussion: <i>Explain counting approaches. Use for individual meal planning as appropriate. <u>It should be done in consultation with the patients' physician and a registered dietitian.</u></i> ○ _____ ○ Discussion: <i>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</i>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<p>determinant of how much short-acting insulin is needed to work with carbohydrate consumed</p> <p>b. Appropriate for clients with type 1 diabetes who are on insulin pump or taking short acting insulin before each meal</p> <p>c. Methodologies</p> <p>i. Carbohydrate gram method –matches units of insulin to grams of carbohydrate. Ideal for clients taking smaller doses of insulin</p> <p>ii. 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</p> <p>IX. Fiber</p> <p>A. People with diabetes should consume at least the minimum amount of fiber recommended daily for the general public</p> <p>B. Daily fiber intake of about 25g./day for women and 38g./day for men</p> <p>X. Dietetic foods</p>	<p><i>individual meal plan</i></p> <p>○ _____</p> <p>○ Videos: <i>What is Carbohydrate counting? Counting Carbohydrate Grams</i></p> <p>○ _____</p> <p>○ Booklet: <i>Calorie King</i></p> <p>○ Discussion: <i>Ask participants to</i></p>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<p>A. Free foods – any food or drink that contains less than 20 calories per serving or less than 5g CHO per serving</p> <ol style="list-style-type: none"> 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” <p>B. Dietetic food – any food that contains an ingredient that has been altered (i.e. “low sodium”, “fat-free”, “gluten-free” etc.). A dietetic food is NOT necessarily a “free food”</p> <p>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</p> <p>D. Nutritive sweeteners</p> <ol style="list-style-type: none"> 1. Sucrose <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> a. May cause a smaller rise in plasma glucose than sucrose or other starchy foods 	<p><i>bring in any “dietetic foods” they may use and discuss how they fit in meal plan.</i></p> <p>○ _____</p> <p>○ Activity/Models: <i>Compare label of dietetic candy bar and regular candy bar – noting the similar calorie, CHO and fat content.</i></p> <p>○ _____</p> <p>○ Discussion: <i>Ask participants to discuss products they may consume with fructose and</i></p>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
Explain the appropriate use of dietetic foods.	<ul style="list-style-type: none"> 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 hydrolysates <ul style="list-style-type: none"> a. Provide 2 kcal/g b. May have laxative effect if eaten in large quantity (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 <ul style="list-style-type: none"> a. No apparent advantage or disadvantage over sucrose with respect to glycemic response or calorie content E. Nonnutritive sweeteners <ul style="list-style-type: none"> 1. Sources – saccharin, aspartame, acesulfame K, sucralose, stevia 2. Acceptable Daily Intake (ADI) determined by Food and Drug Administration (FDA) 3. Average intake for all nonnutritive sweeteners is much less than ADI XI. Alcohol <ul style="list-style-type: none"> A. Metabolism of alcohol in body 	<p><i>how they fit them in meal plan.</i></p> <ul style="list-style-type: none"> ○ _____ ○ Models: <i>Show samples of products made with sugar alcohols sweeteners.</i> ○ <i>Show samples of products made with nonnutritive sweeteners and discuss how they would fit in meal plan.</i> ○ _____ ○ Handout: “Sweet Taste without the Calories” handout at: http://www.dce.org/publications/education-handouts/ ○ _____

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<ol style="list-style-type: none"> 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 <p>B. Effects of alcohol</p> <ol style="list-style-type: none"> 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 <p>C. Guidelines for use of alcohol</p> <ol style="list-style-type: none"> 1. Discuss the use of alcohol with physician and health care team <ol style="list-style-type: none"> a. Oral hypoglycemia agents - (chlorpropamide) precautions <ol style="list-style-type: none"> i. Deep flushing, nausea, rapid heart-beat and impaired speech ii. Hypoglycemia b. Exogenous insulin precautions <ol style="list-style-type: none"> i. Hypoglycemia ii. Effects of alcohol may induce hypoglycemia risk for several hours after drinking iii. Potential need for additional self-monitoring of blood glucose 2. Drink in moderation – limit to 2 drink 	<ul style="list-style-type: none"> ○ Discussion: <i>Ask participants: Do you drink alcohol? If so, ask how do you fit it into meal plan?</i> ○ _____ ○ Discussion: <i>Share case study of an individual with type 1 diabetes who was thought to be “intoxicated” but was experiencing hypoglycemia after a couple of drinks with no food.</i>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	<p>“equivalents”. One equivalent equals 12 oz. beer, 5 oz. wine, 1 ½ oz. distilled alcohol</p> <p>3. If weight loss is a goal, alcohol will contribute to total caloric intake, undermining the efforts toward weight loss</p> <p>4. Guidelines for insulin users</p> <ol style="list-style-type: none"> Limit to two drink equivalents per day Drink only with food Do not cutback on food Abstain if there is a history of alcohol abuse and during pregnancy and lactation Carry a card or wear an identification identifying the person as having diabetes <p>5. Guidelines for noninsulin users</p> <ol style="list-style-type: none"> Substitute for fat calories Limit to promote weight loss or maintenance Limit if triglycerides are elevated Abstain if there is a history of alcohol abuse and during pregnancy and lactation <p>XII. Guidelines for dining out</p> <ol style="list-style-type: none"> Timing (particularly important if taking insulin or oral agents) and preplanning of meals Suggestions for healthy food choices Guidelines for use of alcohol Estimating portion sizes 	<p>○ Handout: <i>Nutrition Fact Sheets for Local Restaurants, Fast Food Guide, Holiday Meal Planning</i></p> <p>○ _____</p> <p>○ Activity/Models: <i>Bring in</i></p>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
List guidelines for use of alcohol.	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	<i>menus from local restaurants and ask participants to select meals based on their individual meal plan.</i> ○ <i>Have a pot luck meal or go thru cafeteria line and have participants select meal based on their plan.</i> ○ <i>Take a supermarket tour and discuss how various foods can fit in meal plan.</i> ○ _____
Describe guidelines for dining out.	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	○ <i>Discussion: Ask participants to share ideas for foods they serve on special occasions and how the foods fit in their meal plan.</i> ○ <i>Ask participants to describe any unusual or ethnic food that they have incorporated into meal plan.</i> ○ <i>Have a 'Food Around the World Day' and try healthy foods from other cultures.</i> ○ <i>Ask participants to bring in labels of products they use and discuss how product fits in meal plan.</i>
Describe meal planning and problem - solving for special occasions.		
Describe how recipes can be calculated into the meal plan.	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	

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
<p>Identify strategies to support healthy eating behaviors/meal planning.</p> <p>Identify diabetes meal planning resources.</p>	<p>D. Build a new healthier habit</p> <ol style="list-style-type: none"> 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 <p>E. Keep food records to identify both healthy and unhealthy habits as well as environmental triggers</p> <p>F. Identify and develop support systems</p> <ol style="list-style-type: none"> 1. Spend time with people who make healthy food choices 2. Ask for help <p>G. Write and sign a contract with self and/or registered dietitian</p> <p>H. Avoid /limit external cues (triggers) to eat</p> <ol style="list-style-type: none"> 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 <p>I. Participate in regular physical activity, as appropriate</p> <p>J. Plan meals and snacks ahead of time</p> <p>K. Use positive self-talk</p> <p>L. Learn relaxation techniques</p> <p>M. Learn assertiveness skills</p> <p>N. Identify non-food rewards/incentives</p> <p>O. Get community support</p> <p>P. Use trustworthy sources of information</p>	<ul style="list-style-type: none"> ○ _____ ○ Video: <i>How to be A Mindful Eater</i> ○ _____ ○ Activity: <i>Practice positive self-talk, Practice relaxation techniques, Role play saying "no"</i> ○ _____ ○ Handout: ○ <i>Meal Planning Resources</i> ○ <i>Local Resources List</i> ○ _____ ○ Mobile Resources: ○ <i>MyFitnessPal app, FitBit app & wristbands, Loselt app, HealthyOut Healthy Meal Finder app</i> ○ _____ ○ Discussion: ○ <i>Ask participants to share</i>

Nutrition

Learning Objective	Content	Instructor's Notes (Check off materials used)
	XVI. Resources A. Libraries B. American Diabetes Association membership C. Support groups D. Exercise facilities E. Weight management programs F. Web sites (See <i>Appendix</i>) G. Print resources	<i>resources they have found helpful.</i> ○ _____

Behavioral Objective	Instructor's Notes
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.	Review behavioral objectives. Making changes, such eating for health, is easier when a person: <ul style="list-style-type: none"> • 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: <i>Personal Goal(s)/Behavior Change Plan</i>

Nutrition

<p>Select the types and amounts of foods to be included in meals and snacks in his/her individualized meal plan.</p>	<p>Review Tab: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p> <p><i>Have participants select foods and amounts appropriate for their meal plan</i></p> <ol style="list-style-type: none"> <i>ask a participant to share meal plan, then ask group to make menus suggesting specific foods and amounts</i> <i>have participants select their meal plan from food models and ask them to share with group their reasons for selection</i> <i>plan a class around meal time and have participants select their meal utilizing their meal plan from cafeteria line or from menu</i>
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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.
- ❑ List signs indicating the need to stop activity and consult a health care provider.

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 exercise 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.
- ❑ Describe signs and symptoms of hypoglycemia during and after physical activity.
- ❑ Identify guidelines for making food adjustments for physical activity.
- ❑ List types of physical activity.
- ❑ Identify community resources to support his/her physical activity plan

Behavioral Objectives

- ❑ Make a plan for one way she/he will be physically active.
- ❑ Make a plan for one way she/he will handle barriers to physical activity.

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:

Why Exercise – The Basics (MF/Diabetescare.net)
Exercise and Hypoglycemia (MF/Diabetescare.net)
Safety Precautions (MF/Diabetescare.net)
Stretches (MF/Diabetescare.net)
Types of Exercise (MF/Diabetescare.net)
Fitness Routines to Help Manage Your Diabetes (Joselin)
Armchair Fitness (Armchairfitness.com)

Audiotapes:

Sit And Be Fit (sitandbefit.org)

Models:

Footwear
Socks

Handouts/Visuals:

Activity Pyramid (JCDH; [Print Out](#))
Calories Spent in Various Exercises (caloriescount.com)
Community Resource List (SD)
Diabetes Identification (www.medicalert.org)
Measuring Intensity Levels ([CDC](#))
Making Food Adjustments for Exercise: General Guidelines ([Print Out](#))
My Personal Activity Plan (SD)
Personal Goal(s)/Behavior Change Plan (SD)
Set An Exercise Goal & Make A Plan ([ADA](#))
Physical Activity Calendar/Logbook (SD)
Physical Activity Guidelines for Americans (Health.gov)
Safe Stretches ([National DPP](#))
Target Heart Rates ([AHA](#))
Tips for Safe Exercise (SD)
Tips to Follow Your Physical Activity Plan (SD)
Screen-Free Week (screenfree.org)

AADE= American Association of Diabetes Educators **ADA**= American Diabetes Association **AND**= Academy of Nutrition and Dietetics **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

Physical Activity

Learning Objective	Content	Instructor's Notes (Check off materials used)
<p>Describe his/her perceptions of physical activity.</p> <p>Describe his/her feelings about participating in regular physical activity.</p> <p>Define intensity in his/her own words.</p>	<p>I. Introduction</p> <p>A. Review diabetes self-care behaviors, including being active.</p> <p>B. Even a small increase in physical activity will have benefits for diabetes outcomes and general health</p> <p>C. Daily physical activity is very important and a major means to treat diabetes</p> <p>II. Attitudes</p> <p>A. Participant's definition</p> <p>B. Obstacles/barriers viewed by participant</p> <p>C. Advantages/benefits viewed by participant</p> <p>III. Definition</p> <p>A. Physical activity is any form of body movement, for example: normal daily activities, leisure-time pursuits, recreational and competitive sports</p> <p>IV. Benefits of physical activity for blood glucose levels</p> <p>A. Lowers blood glucose</p> <ol style="list-style-type: none"> Increases glucose uptake May not improve blood glucose if in poor control <p>B. Decreases insulin resistance</p> <ol style="list-style-type: none"> Increases receptor sites 	<ul style="list-style-type: none"> ○ Review learning objectives. ○ _____ ○ Videos, models, handouts/visuals, computer presentations, discussion/whiteboard/overhead, as appropriate, such as those listed below. ○ Discussion: <i>Explore participant perceptions of what constitutes physical activity.</i> ○ _____

Physical Activity

<p>Describe how physical activity affects blood glucose.</p> <p>List benefits of physical activity.</p>	<ol style="list-style-type: none"> 2. Insulin works better to move glucose out of the blood and into the body's cells C. Reduces medication requirements <ol style="list-style-type: none"> 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 <p>V. Physical activity and weight control</p> <ol style="list-style-type: none"> A. Physical activity burns calories to help with weight loss and weight control B. Modest weight loss often improves blood glucose control. Loss of 5% of body weight often improves 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 may improve weight loss E. A combination of lifestyle (e.g. using stairs instead of elevator) and programmed activity (e.g. daily brisk walking) is recommended <p>VI. Other potential benefits of physical activity</p> <ol style="list-style-type: none"> A. Reduced risk of coronary heart disease (CHD) B. Improves muscular fitness flexibility C. Reduces depression D. Increases energy 	<ul style="list-style-type: none"> ○ Video: <i>Why Exercise – The Basics</i> ○ _____ ○ Discussion: Ask participants to share the benefits of physical activity and list on whiteboard. ○ _____ ○ Handouts/Videos: <i>Stretches, Types of Exercises, Fitness Routines to Help Manage Your Diabetes, Armchair Fitness</i> ○ _____
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Physical Activity

<p>Identify strategies to handle barriers to physical activity.</p> <p>Describe ways s/he can stay safe when physically active.</p> <p>List signs indicating a need to stop physical activity and consult a health care provider.</p> <p>Describe signs and symptoms of hypoglycemia during and after physical activity.</p>	<p>G. Keep a box in the car with equipment such as balls and Frisbees, so the family is always ready to be active</p> <p>IX. Self-care considerations for safe physical activity</p> <p>A. Discuss with health care provider any unusual symptoms experienced during or after physical activity</p> <p>B. Stop activity and consult with health care provider if any of these warning signs occur during physical activity:</p> <ol style="list-style-type: none"> 1. Shortness of breath that lasts more than five minutes 2. Wheezing, coughing or difficulty breathing 3. Pain, pressure or tightness in chest, neck, arms, back, shoulder or upper abdomen 4. Lightheadedness, dizziness, fainting 5. Cramps, severe pain, or muscle aches 6. Severe prolonged fatigue or exhaustion after exercise 7. Nausea or vomiting 8. Weakness in arms, legs, hands, feet or transient blindness <p>C. If you have diabetes complications, ask about special precautions for exercise</p> <p>D. Monitor blood glucose before, during, and after exercise</p> <ol style="list-style-type: none"> 1. If type 1 and blood glucose above 240 mg/dl, test for ketones. Avoid physical activity if ketones present 	<p>started and how they keep on track.</p> <p>○ _____</p> <p>○ Web Resource: <i>Screen-Free Week</i></p> <p>○ _____</p> <p>○ Handout: <i>Activity Pyramid, My Personal Activity Plan</i></p> <p>○ _____</p> <p>○ Role play: <i>Handling problem cues and other barriers to being physically active.</i></p> <p>○ _____</p> <p>○ Handout: <i>Tips for Safe Exercise, Safe Stretches</i> <i>Tips for Safe Exercise,</i></p>
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Physical Activity

<p>Identify guidelines for making food adjustments for physical activity</p>	<ol style="list-style-type: none"> 2. Discuss with health care provider guidelines for physical activity when blood glucose elevated E. Learn recognition, treatment, and prevention of hypoglycemia <ol style="list-style-type: none"> 1. Wear diabetes identification 2. Carry carbohydrates 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 <i>Acute Complications</i> module F. Warm up before exercise and cool down after, if needed <ol style="list-style-type: none"> 1. Prevents muscle damage 2. Examples include deep breathing and gentle stretching G. Wear proper footwear and inspect feet frequently H. Coordinate food, medication, and physical activity I. Ways to assess effort <ol style="list-style-type: none"> 1. Talk test: If you can talk, working at moderate effort; if you can talk in short phrases, are working at vigorous effort; if you cannot talk, working too hard 2. Effort Scales: Use a rating scale of 1-10 3. Measuring heart rate if told to do so by provider J. Drink adequate amounts of water before, during and after the activity to replace fluids K. Use safe areas to exercise. If you will be alone, tell someone where you will be. <p>X. Physical activity and insulin</p>	<p><i>Fitness Routines to Help Manage Your Diabetes</i></p> <p>○ _____</p> <p>○ Discussion: Ask participants to share how they stay safe when physically active.</p> <p>○ _____</p> <p>○ Handout: <i>Diabetes Identification</i></p> <p>○ _____</p> <p>○ Discussion: Ask participants to share what they do to personally prepare themselves in the event of hypoglycemia.</p> <p>○ _____</p>
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Physical Activity

List kinds of physical activity.	<p>A. If blood glucose levels before physical activity are less than 80mg/dl, the risk of hypoglycemia is significant and the activity should not begin without ingestion of carbohydrates</p> <p>B. Physical activity may increase blood glucose level if not enough insulin present</p> <p>C. Discuss with health care provider guidelines for physical activity when blood glucose is elevated</p> <p>D. Insulin adjustment before, and possibly after, physical activity may be needed</p> <p>E. Providers may suggest the following adjustments</p> <ol style="list-style-type: none"> 1. 30-50% reduction of the short acting insulin during the time of activity 2. Change basal rate on insulin pump 3. Consider extra food for extra activity <p>F. Monitor blood glucose before, during (if >30 minutes duration), after exercise ($\frac{1}{2}$ -2 hrs.). Physical activity may have a delayed effect (up to 24 hours) for hypoglycemia</p> <p>G. Wear medical identification bracelet or necklace</p>	<ul style="list-style-type: none"> ○ Handout: <i>Making Food Adjustments for Exercise: General Guidelines</i> ○ _____ ○ Models: <i>Footwear, Socks</i> ○ _____ ○ Handouts: <i>Effort Scales, Target Heart Rates</i> ○ _____ ○ Handout: ○ <i>Calories Spent in Various Exercises</i> ○ _____ ○ Discussion: Ask participants to share kinds of physical activity. ○ _____
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Physical Activity

Behavioral Objective	Instructor's Notes
<p>Make a plan for one way she/he will be physically active.</p> <p>Make a plan for one way s/he will handle barriers to physical activity.</p>	<p>Review behavioral objectives.</p> <p>Making changes, such as being physically active, is easier when a person:</p> <ul style="list-style-type: none"> • Gathers information • Makes plans • Breaks plans down into small steps <p>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.</p> <p>Handout: <i>Personal Goal(s)/Behavior Change Plan</i></p> <p>Review Tab 9: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p>

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 she/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

Web Resources:

[BD Education](#)

[Novo Nordisk](#)

[Lantus](#)

[Levemir](#)

[Humalog](#)

Videos:

How Oral Medications Work (MF/[Diabetescare.net](#))

Types of Insulin (MF/[Diabetescare.net](#))

Understanding Insulin (MF/[Diabetescare.net](#))

Insulin, Hypoglycemia and Sick Days (MF/Diabetescare.net)
Oral Medications, Hypoglycemia and Sick Days (MF/Diabetescare.net)
Using Insulin Safely (MF/Diabetescare.net)
Using Oral Medications Safely (MF/Diabetescare.net)

Models:

Body Apron (www.idealabetes.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)
Physicians Drug Reference

Handouts/Visuals:

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

AADE= American Association of Diabetes Educators **ADA**= American Diabetes Association
AND= Academy of Nutrition and Dietetics **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

Medications

Learning Objective	Content	Teaching Strategy/Resource
	<p>I. Introduction</p> <ul style="list-style-type: none"> 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 (<i>if needed</i>) and other self-care behaviors D. With diabetes, the amount of insulin a person produces may vary. Insulin resistance may also play a factor in how much insulin is required. <p>II. Diabetes medication types</p> <ul style="list-style-type: none"> A. Oral medications B. Insulin C. Non-insulin injectable medications <p>III. General considerations for medication therapy</p> <ul style="list-style-type: none"> A. Individualized B. Staged approach <ul style="list-style-type: none"> 1. Chronic, progressive disease—medication needs may change over time 2. Balance with changes in meal and physical activity plans 	<p>Review learning objectives.</p> <ul style="list-style-type: none"> ○ _____ <p>Booklet: <i>Medicines for People with Diabetes</i></p> <ul style="list-style-type: none"> ○ _____

Medications

<p>Describe the general staged approach to diabetes management and use of medications.</p> <p>Describe the timing of diabetes medication to meals/snacks and physical activity.</p>	<ol style="list-style-type: none"> 3. Consider baseline control and degree of glucose reduction needed to reach goal 4. Health care providers guidelines C. Combination therapy D. Frequent monitoring E. Side effects/contraindications F. Risks/benefits G. Effects on other risk factors <ol style="list-style-type: none"> 1. Lipids H. Commitment I. Medication regimen complexity J. Concurrent lifestyle changes K. Care and storage of medications L. Cost <p>IV. Oral Medications</p> <ol style="list-style-type: none"> A. General <ol style="list-style-type: none"> 1. Frequency of dosage varies among types of <ol style="list-style-type: none"> a. oral medications; take about the same time each day 2. Tips for remembering <ol style="list-style-type: none"> a. Associate with another daily activity b. Calendar, pill box c. Use automatic reminders with computer or cell phone 3. Recommendations for missed doses 4. Store at room temperature 5. Check expiration date 6. Some oral diabetes medications should not be taken by women who are pregnant or lactating 	<p>Video:</p> <ul style="list-style-type: none"> ○ <i>Oral Medications, Hypoglycemia & Sick Days</i> ○ _____ <p>Models:</p> <ul style="list-style-type: none"> ○ <i>Pill samples</i> ○ <i>Pill bottle samples</i> ○ <i>Pill box samples</i> ○ _____
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Medications

<p>State the name, dose, schedule, action, and possible side effects of his/her medication.</p> <p>Identify actions to remember to take medication.</p>	<ol style="list-style-type: none"> 7. Travel with medications 8. Report all side effects <p>B. Indications for oral medications</p> <ol style="list-style-type: none"> 1. Used for Type 2 diabetes 2. Indicated when not reaching blood glucose goals with dietary therapy and physical activity 3. Adjunct to dietary therapy and physical activity, not a replacement <p>C. Classes of Oral Agents</p> <ol style="list-style-type: none"> 1. Sulfonylureas <ol style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ol style="list-style-type: none"> i. Stimulates release of insulin by the pancreas (primary effect) ii. May decrease hepatic insulin uptake iii. Effect on receptor sites and post-receptor defects iv. Dependent on functioning beta cells c. Contraindications <ol style="list-style-type: none"> i. Type 1 diabetes ii. DKA iii. Some are used during pregnancy and lactation. Check with provider. iv. Hypersensitivity to the drug v. Hold if NPO vi. Elderly, debilitated or malnourished individuals d. Possible side effects <ol style="list-style-type: none"> i. Primary: hypoglycemia, weight gain ii. Less common: dermatologic, gastrointestinal, hematologic 	<p>Handout:</p> <ul style="list-style-type: none"> ○ <i>Oral Medication Chart</i> ○ <i>Medicine List</i> ○ _____ <p>Discussion:</p> <ul style="list-style-type: none"> ○ <i>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 medications</i> ○ _____ ○ _____ <p>Model</p> <ul style="list-style-type: none"> ○ <i>Body Apron</i> ○ _____
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Medications

<p>Identify the mechanism of action of diabetes medications.</p>	<ul style="list-style-type: none"> e. Can be used alone or with other oral diabetes medication or insulin f. Interactions and incompatibilities with other medications <ul style="list-style-type: none"> i. Alcohol - “antabuse-like” reaction with chlorpropamide (second generation do not cause alcohol intolerance) ii. Possible symptoms are headache, nausea, vomiting, thirst, sweating, flushing, a feeling of warmth, chest pain, confusion, syncope, vertigo, difficulty breathing, and/or hypotension iii. Symptoms last ½ hour to several hours depending on the amount of alcohol consumed <p>2. Meglitinides</p> <ul style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ul style="list-style-type: none"> i. Stimulates insulin secretion from pancreas ii. Dependent on functioning beta cells iii. Rapidly absorbed and eliminated c. To be taken immediately to 30 minutes before meals (skip medication if meal omitted, Prandin may be dosed pre-prandial 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 <ul style="list-style-type: none"> i. type 1 diabetes 	
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Medications

<p>List possible side effects and potential risks of diabetes medications.</p>	<ul style="list-style-type: none"> ii. DKA iii. Hypersensitivity to the drug iv. Hold if NPO v. Elderly, debilitated or malnourished individuals vi. Not for use in pregnancy and lactation f. Possible side effects <ul style="list-style-type: none"> i. Same as sulfonylureas; because they are taken with a meal, unlikely to cause low blood sugar ii. Arthralgia/back pain/headache iii. Upper respiratory infection 3. Biguanides <ul style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ul style="list-style-type: none"> i. Inhibits hepatic glucose production ii. Increases glucose uptake and utilization (decreased insulin resistance) c. Secondary Benefits <ul style="list-style-type: none"> i. Body weight tends to remain stable or decrease ii. Reduces FPG more than PPG iii. Significant reduction in total cholesterol, reduction of LDL, increase in HDL, and reduction in triglycerides iv. Does not produce hypoglycemia when used as monotherapy d. Contraindications <ul style="list-style-type: none"> i. Type 1 diabetes ii. Renal impairment (serum creatinine 1.5 or > in males or 1.4 > in females) and 	
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Medications

	<p>liver dysfunction</p> <ul style="list-style-type: none"> iii. CHF that requires drug therapy iv. History alcoholism, binge drinking or acute or chronic metabolic acidosis, including ketoacidosis v. Hypersensitivity to metformin vi. Not for use beyond second trimester in pregnancy and lactation <p>e. Possible side Effects</p> <ul style="list-style-type: none"> i. 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. ii. Less common: metallic taste iii. Agitation, sweating, headache iv. May cause reduction in Vitamin B12 v. Black Box Warning for lactic acidosis <p>f. Withhold metformin with:</p> <ul style="list-style-type: none"> i. Conditions predisposing to acute renal failure or acidosis such as CHF, major surgery, MI ii. Diagnostic or medical exams using intravenous contrast media <p>g. Ovulation may be restored if not ovulating because of insulin resistance</p> <p>4. Alpha Glucosidase Inhibitors</p> <ul style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ul style="list-style-type: none"> i. Reduces the rate of absorption of carbohydrates 	
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Medications

	<ul style="list-style-type: none"> ii. Reduces postprandial glucose levels c. Take only when eating d. Contraindications <ul style="list-style-type: none"> i. Type 1 diabetes ii. DKA iii. Hypersensitivity to the drug iv. Chronic intestinal disease v. Inflammatory bowel disease vi. Colonic ulceration vii. Obstructive bowel disorders viii. Elevated serum creatinine - >2.0 ix. Cirrhosis x. Not for use in pregnancy, lactation or in children e. Possible side Effects <ul style="list-style-type: none"> i. Dose related GI complaints such as abdominal pain, flatulence and diarrhea; reduced if dose increased slowly ii. Hepatic dysfunction at high doses f. Hypoglycemia if used in combination with sulfonylureas or insulin: Treat hypoglycemia with glucose tabs, Instaglucoose, 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) <ul style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ul style="list-style-type: none"> i. Stimulate receptors with increased 	<ul style="list-style-type: none"> o ***Note FDA Warnings for TZD's
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Medications

	<p>glucose uptake (decreased insulin resistance)</p> <ul style="list-style-type: none"> c. May take 4-6 weeks to start working d. Contraindications <ul style="list-style-type: none"> i. Type 1 diabetes ii. DKA iii. Hypersensitivity to the drug iv. Congestive heart failure e. Possible side effects: edema, weight gain, liver dysfunction, bladder cancer (Actos), osteoporosis, bone fractures and macular edema <ul style="list-style-type: none"> i. Both Avandia & Actos have Black Box warning for CHF ii. Important to review all Black Box warnings regularly as these can change often for all medications 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 due to insulin resistance <p>6. DPP-IV Enzyme Inhibitors</p> <ul style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ul style="list-style-type: none"> i. Inhibiting DPP-IV enzyme results in decreased fasting plasma glucose ii. Suppression of postprandial glucose excursions 	
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Medications

	<ul style="list-style-type: none"> iii. Works only when blood sugar is high, especially after eating c. Once daily dosage d. Contraindications <ul style="list-style-type: none"> i. Hypersensitivity to sitagliptin, saxagliptin ii. Type 1 diabetes, diabetic ketoacidosis iii. Caution if patient has impaired renal function (Januvia & Onglyza) iv. Caution pancreatitis v. Caution elevated LFT (Alogliptin) e. Possible side effects <ul style="list-style-type: none"> i. Allergic reactions, including rash and hives ii. Upper respiratory symptoms iii. Pancreatitis iv. Abdominal pain (Sitagliptin & Saxagliptin) <p>7. SGLT2 Inhibitors</p> <ul style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ul style="list-style-type: none"> i. Lowers renal threshold for glucose, which leads to increased urinary glucose excretion c. Contraindications <ul style="list-style-type: none"> i. Pregnancy, breastfeeding or children ii. Type 1 diabetes or DKA iii. Limit dose for those with GFR 45-60; do not use with GFR<45 d. Side Effects <ul style="list-style-type: none"> i. Yeast infections ii. Urinary tract infections iii. Increased urination 	
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Medications

<p>State the indications for adding or changing medications in the treatment regimen.</p>	<ul style="list-style-type: none"> iv. Dehydration, hyperkalemia v. Increased LDL cholesterol level vi. Hypotension vii. Renal impairment viii. Bone density loss, fractures ix. Constipation 8. Dopamine Receptor Agonists <ul style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ul style="list-style-type: none"> i. It is not clear how Cycloset improves glycemic control, but it is thought that the drug taken at a particular time of day boosts dopamine activity which helps improve metabolism problems related to diabetes c. Once daily dosage d. Contraindications <ul style="list-style-type: none"> i. Hypersensitivity to bromocriptine ii. Cycloset should not be taken by people who take ergot medicines iii. Caution in people who take blood pressure medications iv. Type 1 diabetes, DKA v. Pregnancy vi. Caution with renal impairment, cardiovascular disease, dementia & hepatic involvement e. Possible side effects <ul style="list-style-type: none"> i. nausea, fatigue, vomiting, headache, and dizziness ii. ALT, AST, ALK phosphatase elevation 	
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Medications

	<ul style="list-style-type: none"> iii. Involuntary movements, visual disturbances & ataxia 9. Lipid Lowering Agent <ul style="list-style-type: none"> a. See Medications chart b. Mechanism of Action <ul style="list-style-type: none"> i. It is not clear how it works for diabetes c. Contraindications <ul style="list-style-type: none"> i. GI obstruction, motility disorder, surgery ii. Hypertriglyceridemia induced pancreatitis iii. Elevated triglycerides (caution 300-500, contraindicated above 500) d. Side effects <ul style="list-style-type: none"> i. Constipation, nausea, vomiting ii. Pancreatitis iii. Nasopharyngitis iv. Myalgia v. Hypoglycemia, hypertension & hypertriglyceridemia D. Indications for medication changes <ul style="list-style-type: none"> 1. Ineffectiveness of medication for individual from the beginning 2. Loss of glucose control due to chronic nature of diabetes <ul style="list-style-type: none"> 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 	
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Medications

	<ol style="list-style-type: none"> 1. Types of combination therapy <ol style="list-style-type: none"> a. Combination of oral medications b. Combination of oral medication(s) and insulin c. Check current FDA approvals for various combinations of oral medications and/or insulins 2. Indications <ol style="list-style-type: none"> 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 d. Improves adherence to medication plan 3. Contraindications <ol style="list-style-type: none"> a. Type 1 diabetes b. Other concerns regarding costs and <ol style="list-style-type: none"> i. complex medication regimen 4. Subject of current research <p>V. Non-insulin Injectable Diabetes Medication</p> <ol style="list-style-type: none"> A. Incretin mimetic <ol style="list-style-type: none"> 1. See Medications chart 2. Mechanism of Action <ol style="list-style-type: none"> a. Increased insulin synthesis and secretion in the presence of elevated glucose b. Improvement in first-phase insulin response c. Reduced glucagon concentrations during hyperglycemic swings d. Slowed gastric emptying e. Reduced food intake 3. Administration 	
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Medications

	<ul style="list-style-type: none"> a. Injectable b. For use with Type 2 diabetes 4. Benefits <ul style="list-style-type: none"> a. Improves postprandial hyperglycemia b. Modest reduction in A1C levels often noted c. Reduction in body weight often noted 5. Contraindications <ul style="list-style-type: none"> a. With medullary thyroid carcinoma history or family history, or with MEN2 b. Severe gastroparesis or GI disease c. History of pancreatitis d. Impaired renal function or renal transplant 6. Possible side effects <ul style="list-style-type: none"> a. Nausea, vomiting, diarrhea b. Weight loss c. Pancreatitis <p>B. Amylin analog</p> <ul style="list-style-type: none"> 1. See Medications chart 2. Mechanism of action <ul style="list-style-type: none"> a. Slows gastric emptying b. Suppresses glucagon secretion c. Regulates food intake 3. Administration <ul style="list-style-type: none"> a. Used at meal times b. Injected in separate syringe (with meals) c. For use in Type 1 or Type 2 4. Contraindications <ul style="list-style-type: none"> a. Must be taken with a meal of at least 250 calories or 30 grams of carbohydrates b. Hypoglycemia unawareness 	<p>Video:</p> <ul style="list-style-type: none"> ○ <i>Understanding Insulin</i> ○ <i>Types of Insulin</i> ○ <i>Using Insulin Safely</i> ○ <i>Insulin, Hypoglycemia & Sick Days</i> ○ _____ <p>Model:</p> <ul style="list-style-type: none"> ○ <i>Body Apron</i> ○ _____
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Medications

<p>Describe the different sources, types, strengths, and action times of insulin.</p>	<ul style="list-style-type: none"> c. Gastroparesis 5. Possible side effects <ul style="list-style-type: none"> a. Severe hypoglycemia (black box warning) b. Nausea, vomiting, fatigue c. Cough, pharyngitis VI. Insulin <ul style="list-style-type: none"> A. Mechanism of action <ul style="list-style-type: none"> 1. Binds to insulin receptor <ul style="list-style-type: none"> a. Inhibits hepatic glucose production b. Stimulates hepatic glucose uptake c. Stimulates glucose uptake by muscle d. Mildly stimulates glucose uptake by adipose tissue B. Possible Side effects <ul style="list-style-type: none"> 1. Type 2- hypoglycemia and weight gain 2. Type 1- hypoglycemia C. Indications for use <ul style="list-style-type: none"> 1. Type 1 <ul style="list-style-type: none"> a. Essential for life b. Prevents ketosis 2. Type 2 <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> ○ Handout: ○ <i>Comparison of Insulins</i> ○ _____ ○ Video: ○ <i>Types of Insulin</i> ○ _____
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Medications

<p>Describe how to draw up, mix, and inject the correct amount of insulin.</p> <p>Describe the correct areas to inject insulin.</p> <p>State how to tell if it is all right to inject insulin at a particular site.</p>	<ul style="list-style-type: none"> d. As disease progresses, decline in insulin secretion may necessitate the addition of exogenous insulin e. If oral diabetes medications are contraindicated <p>D. Types of Insulin (see Medications chart)</p> <ol style="list-style-type: none"> 1. Rapid Acting 2. Short-acting Regular 3. Intermediate-acting, NPH 4. Long-acting 5. Mixtures <p>E. Properties of insulin</p> <ol style="list-style-type: none"> 1. Onset, peak and duration of action <ol style="list-style-type: none"> a. Concentrations <ol style="list-style-type: none"> i. U-100 (100 units/ml) - usually has orange cap – most common ii. U-500 regular (500 units/ml) iii. U200 Lispro (200 units/ml) iv. U300 Lantus (300 units/ml) b. See chart <p>F. Administration of insulin</p> <ol style="list-style-type: none"> 1. General <ol style="list-style-type: none"> 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 combination c. Dosage and frequency will likely vary over time d. Based on pattern management 	<ul style="list-style-type: none"> ○ Models: ○ Syringes ○ Insulin vials ○ Other supplies ○ _____ <ul style="list-style-type: none"> ○ Handout: ○ Mixing Insulin ○ _____
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Medications

<p>Describe the care, storage, and disposal of insulin, needles, and syringes.</p>	<ol style="list-style-type: none"> 2. Technique <ol style="list-style-type: none"> a. Once vials are punctured, stable for one month for both rapid acting and single type of insulin b. Mixed insulins <ol style="list-style-type: none"> i. Regular and NPH: Regular must be drawn before NPH. Can prefill syringes, but they need to be mixed prior to use. Clear before cloudy rule when mixing in syringe ii. Rapid Acting insulin with NPH: Rapid acting must be drawn <i>before</i> NPH, mixture stable in any ratio, administer immediately after mixing iii. Glargine/detemir: Do not mix with other insulins iv. Commercially premixed insulins 3. Injection sites <ol style="list-style-type: none"> a. Top and outer third of each thigh b. Abdomen <ol style="list-style-type: none"> i. Avoid navel and midline due to increased number of nerve endings c. Upper outer 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 <ol style="list-style-type: none"> a. Immediately exercising the part of the body that was injected with insulin may result in an increased absorption rate. b. Temperature of insulin – inject at room 	<ul style="list-style-type: none"> ○ Handout: ○ <i>Insulin Action Times Chart</i> ○ <i>Administering Insulin</i> ○ <i>Injection Sites</i> ○ _____
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Medications

<p>State how to tell if a particular bottle of insulin is usable.</p> <p>Describe methods for storing insulin during travel.</p> <p>Describe the reuse of disposable insulin syringes including techniques, benefits, and risks.</p>	<div style="text-align: right;">temperature, insulin may be more comfortable for patient</div> <ol style="list-style-type: none"> c. Avoid site massage d. Rate of absorption varies with site. Sites with slowest to fastest absorption rates are: buttock, thigh, arm, abdomen e. Thigh or buttock may be preferred site for intermediate or long-acting insulin due to slower absorption rate f. Check for lipoatrophy/lipohypertrophy <p>G. Storing insulin</p> <ol style="list-style-type: none"> 1. Vials are stable at room temperature for 28 days, refrigerate extra bottles 2. Insulin pens are stable at room temperature for 30 days <ol style="list-style-type: none"> a. Exceptions: Levemir (42 days), NPH (42 days), mixed insulin (10 days) 3. Avoid temperature extremes - keep in range of > 32° F to < 86° F 4. Do not use beyond expiration dates 5. Do not use any insulin that is abnormal in color, or any mixed insulin that appears stringy or has lumps that do not disappear 6. Traveling <ol style="list-style-type: none"> a. If traveling and you are not sure where luggage will be stored, keep insulin with you and not stored in baggage (due to temperature changes) b. Consider a way to store insulin if recommended storage temperatures cannot be maintained 	<p><i>Handout:</i></p> <ul style="list-style-type: none"> ○ <i>Travel Tips</i> ○ _____ <p><i>Model;</i></p> <ul style="list-style-type: none"> ○ <i>Insulin Carrying Packs</i> ○ _____
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Medications

Describe various methods of insulin delivery and administration.	<ul style="list-style-type: none"> i. To keep cool: use insulated containers such as thermos, cooler etc. To keep warm: Store under jackets in pockets next to the body c. On trips, carry extra insulin, supplies and snacks on your person d. Carry extra prescriptions for supplies and medications e. Learn current airline policies for carry on of insulin supplies <p>H. Syringes and Needles</p> <ol style="list-style-type: none"> 1. One (1) cc syringe equals 100 units insulin 2. Low-dose syringe (0.30, 0.50 cc) available for dosages under 50 units 3. Fine and short needles available 4. Reusing disposable syringes <ol style="list-style-type: none"> a. Not recommended by manufacturers b. Replace cap after use c. Proper skin preparation needed d. Use good hand washing technique e. Reuse of syringes is dependent on individual consideration; infection risk can be higher in some individuals. Needle dullness can be a problem. f. Syringes used for Lantus or Levemir cannot be reused for <u>any other type</u> of insulin <ol style="list-style-type: none"> i. Reuse of pen needles is not recommended; if air enters the cartridge it can affect the pressure inside and alter correct dose delivery 5. Guidelines for disposal of used syringes and 	<p><i>Handout:</i></p> <ul style="list-style-type: none"> ○ Disposal Tips ○ _____ <p><i>Model:</i></p> <ul style="list-style-type: none"> ○ Sharps Disposal Containers ○ _____ <p><i>Model:</i></p> <ul style="list-style-type: none"> ○ Insulin Injection Devices ○ _____
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Medications

<p>Define lipohypertrophy and lipoatrophy and describe how to prevent.</p>	<p>lancets</p> <ol style="list-style-type: none"> Use puncture-resistant containers for disposal (i.e. plastic, bleach bottle, or laundry detergent bottles, sharps containers) When traveling, if there are no sharps containers available, bring sharps home to dispose of Check with your town for guidance on sharps disposal once your containers are full. In general, unless trash goes to a landfill, the containers can be put in a bag of trash for incineration <p>I. Injection aids and pumps</p> <ol style="list-style-type: none"> Automatic injectors Insulin Pens Insulin Pump <p>J. Complications of exogenous insulin therapy</p> <ol style="list-style-type: none"> Hypoglycemia (See <i>Acute Complications</i> module) Lipoatrophy <ol style="list-style-type: none"> Occurs at site of injection Allergic response to insulin Avoid affected area for injection site as absorption may be altered Lipohypertrophy <ol style="list-style-type: none"> Reuse of same injection site without rotation Caused by fat disposition Avoid affected area for injection site as absorption may be altered <p>K. Insulin regimens</p> <ol style="list-style-type: none"> General considerations <ol style="list-style-type: none"> Mechanisms of action 	<p><i>Handout:</i></p> <ul style="list-style-type: none"> ○ <i>Insulin Regimens</i> ○ _____
<p>Describe how to make adjustments in insulin dosage according to guidelines provided by their health care provider.</p>		<p><i>Handout:</i></p> <ul style="list-style-type: none"> ○ <i>Wallet Identification Card</i> ○ <i>Diabetes Identification</i> ○ _____

Medications

<p>Describe strategies to take his/her medicine safely and as prescribed.</p> <p>Identify guidelines for talking with the health care team about his/her diabetes medication.</p>	<ul style="list-style-type: none"> b. Advantages and disadvantages c. Frequency of monitoring d. Psychological issues <p>2. Types</p> <ul style="list-style-type: none"> 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, in addition to glucose-lowering agents <p>3. Adjusting insulin doses</p> <ul style="list-style-type: none"> a. Adjust under health care provider supervision b. Use of monitoring results <ul style="list-style-type: none"> i. Look for explanations of blood glucose variations ii. Need to see more than 2 days of patterns before changing dose <p>L. Diabetes Identification</p> <ol style="list-style-type: none"> 1. Wear/carry diabetes identification <p>VII. Tips to Take Medication as Prescribed</p> <ul style="list-style-type: none"> A. Talk with health care team about medication that fits in personal schedule B. Take at about the same time each day (unless using rapid acting insulin, which is taken whenever the patient eats) C. Take when doing other routine activities D. Keep in convenient locations E. Use self-reminders <ol style="list-style-type: none"> 1. Calendar 	<p>Model:</p> <ul style="list-style-type: none"> ○ <i>Medicine Organizer</i> ○ _____
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Medications

	<ol style="list-style-type: none"> 2. Sticky notes 3. Medicine organizer/pill box 4. Cell phone: add alarms or reminders <p>F. Talk with health care team about:</p> <ol style="list-style-type: none"> 1. What to do if medication is missed, lost or damaged 2. What to do about special events and when away from home 3. How to get more medication when needed <p>VIII. Tips to Take Medication Safely</p> <ol style="list-style-type: none"> A. Know the name, dose and schedule B. Keep a medicine list C. Take as prescribed D. Do not take anyone else's medication E. Do not share medication with others F. Read the label each time 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. Understand the impact/effects of alcohol and/or recreational drugs on your medications N. Wear diabetes identification O. Guidelines for Talking With Health Care Team <ol style="list-style-type: none"> 1. Blood sugar above or below target ranges 2. Side effects from medication 	<p>Handout:</p> <ul style="list-style-type: none"> ○ <i>Pharmacy Information Sheets</i> ○ _____ <p>Handout:</p>
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Medications

<p>State that alcohol and other drugs can affect diabetes control.</p> <p>Describe possible influences of other medications on diabetes medication.</p>	<ol style="list-style-type: none"> 3. Missing medication doses, particularly if it is not resumed 4. Pregnant or planning pregnancy 5. Illness 6. Questions about new medications (prescribed or over-the-counter) may impact diabetes 7. Questions about upcoming surgery or medical procedure 8. Questions about Event/special occasion planned that may affect eating, sleeping, physical activity or medication schedule <p>IX. Other medications that affect blood glucose</p> <ol style="list-style-type: none"> A. Use of other medications may increase or decrease insulin needs <ol style="list-style-type: none"> 1. Check with your pharmacist to learn if something prescribed to you may impact your blood glucose B. Over-the-counter medications <ol style="list-style-type: none"> 1. Over-the-counter “cold” medications may cause high blood sugar 2. Aspirin in high doses may cause a hypoglycemic effect 3. Many sugar-free products are available, though many providers feel the amount of sugar in regular cough syrup is not problematic C. Report all side effects to health care provider D. Limit pharmacy use to one or two different pharmacies and the same with health care providers (when possible) to avoid drug interactions 	<ul style="list-style-type: none"> ○ <i>Non-prescription Medications</i> ○ _____ ○ Handout: ○ <i>Herbal Products</i> ○ _____
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Medications

<p>Describe the causes, symptoms, treatment and prevention of hypoglycemia.</p>	<p>X. Alcohol</p> <ul style="list-style-type: none"> 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 C. Alcohol can be found in many forms, including liquid medications (i.e. cough syrups) D. Check with your pharmacist or provider for which over-the-counter medications contain alcohol <p>XI. Herbal Products/"Natural" Remedies</p> <ul style="list-style-type: none"> 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 <p>XII. Hypoglycemia</p> <ul style="list-style-type: none"> A. Can occur with sulfonylureas , meglitinides and insulin B. Can occur with any form of glucose lowering medication C. Duration of the glucose lowering agent will affect when and for how long the hypoglycemia occurs D. If occurs with combination of alpha glucosidase inhibitors with sulfonylurea or insulin therapy, hypoglycemia must be treated with milk or glucose tablets. Other sucrose containing products will not be absorbed fast enough to treat the hypoglycemia. 	
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Medications

	<p>E. Contact health care provider right away if hypoglycemia does not respond to treatment or if hypoglycemia is recurrent.</p> <p>F. See <i>Acute Complications</i> Module</p>	
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Behavioral Objective	Instructor's Notes
<p>Make a plan for one thing s/he will do to take his/her medication(s) safely and as prescribed.</p> <p>Additional for Insulin:</p> <p>Demonstrate how to draw up,</p>	<p>Review behavioral objectives.</p> <p>Making behavior changes, such taking diabetes medication safely and as prescribed, is easier when a person:</p> <ul style="list-style-type: none"> • Gathers information • Makes plans • Breaks plans down into small steps

Medications

<p>mix and inject the correct amount of insulin.</p> <p>Demonstrate the correct areas to inject insulin.</p> <p>Demonstrate how to make adjustments in insulin dosage according to the guidelines provided by their health care provider.</p>	<p>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.</p> <p>Handout: <i>Personal Goal(s)/Behavior Change Plan</i></p> <p>Review Tab: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p>
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*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 Physicians' Desk Reference (PDR) for more drug information.

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 best times to check blood glucose.
- ❑ 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.
- ❑ Know when 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 she/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 she/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:

Your Management Plan (MF/Diabetescare.net)
How to Check Your Blood Glucose (MF/Diabetescare.net)
Choosing and Caring for Your Meter (MF/Diabetescare.net)
Knowing When to Check Your Levels (MF/Diabetescare.net)
The Need for Blood Glucose Monitoring and Record Keeping (MF/Diabetescare.net)
A1c and Long-Term Complications (MF/Diabetescare.net)

Models:

A1C Pillow (www.idealabetes.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:

Your Insulin Adjustment Workbook ([PC](#))
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, [ADA](#))
Local Resource List (SD)
Counseling Techniques for Clinicians and Educators ([ADA](#))
Pattern Samples (SD)

Personal Goal(s)/Behavior Change Plan (SD)
Self-Blood Glucose Monitoring Record Book ([PC](#))
Self-Monitoring of Glucose ([PC](#))
Checking for Ketones ([ADA](#))
Timing Blood Sugar Test to Assess the Effect of Insulin Dose (HHM)

AADE= American Association of Diabetes Educators **ADA**= American Diabetes Association **AND**= Academy of Nutrition and Dietetics **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

Monitoring

Learning Objective	Content	Instructor's Notes (Check off materials used)
State recommended and personal blood glucose goals.	<p>I. Introduction</p> <ul style="list-style-type: none"> 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 <p>II. Blood Glucose Goals</p> <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 1. If outside range, take action B. Recommended blood glucose goals (non-pregnant adults): <ul style="list-style-type: none"> 1. Plasma values: <ul style="list-style-type: none"> a. Pre-prandial Goal <ul style="list-style-type: none"> i. ADA – 90-130mg/dl ii. ACE – <110 mg/dl b. Postprandial goal – <ul style="list-style-type: none"> i. ADA - <180 mg/dl (up to 2 hours post 	<p>Review learning objectives.</p> <ul style="list-style-type: none"> ○ _____ <p>Videos, models, handouts/visuals, discussion/whiteboard/overhead, as appropriate, such as those listed below.</p> <p>Handouts: <i>Control Your Diabetes—For Life, Clinical Practice Recommendations</i></p> <ul style="list-style-type: none"> ○ _____ ○ Emphasize goals are modifiable based on other factors ○ _____

Monitoring

<p>Define A1C.</p> <p>State the importance of A1C testing.</p>	<div style="margin-left: 40px;">meal)</div> <div style="margin-left: 80px;">ii. ACE - <140 mg/dl (1 hour post meal)</div> <ol style="list-style-type: none"> 2. HbA1c: <ol style="list-style-type: none"> a. Normal: <5.7 b. Goal <ol style="list-style-type: none"> i. ADA - <7 ii. ACE - <6.5% c. Additional action: >8 C. Personal blood glucose goals <ol style="list-style-type: none"> 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 patient 4. Use as guide for evaluating monitoring data <p>III. Types of Monitoring:</p> <ol style="list-style-type: none"> A. Self-blood glucose monitoring (SBGM) B. Urine testing (ketones) C. Continuous Glucose Monitoring (CGM) D. Glycated proteins <p>IV. Self-blood glucose monitoring</p> <ol style="list-style-type: none"> A. Purpose: Evaluate blood glucose control 	<ul style="list-style-type: none"> ○ Discussion: <i>Review personal blood glucose goals participant has written down.</i> ○ Handout: <i>Self-Monitoring—Taking Charge of Your Diabetes</i> ○ _____ ○ Discussion: <i>Ask participants to</i>
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Monitoring

<p>Define the purpose of self-blood glucose monitoring.</p> <p>Explain that self-blood glucose monitoring is done to determine actual level of glucose in the blood.</p> <p>List personal benefits of monitoring blood glucose.</p> <p>Identify the advantages and disadvantages of blood glucose monitoring.</p>	<ol style="list-style-type: none"> 1. Decide what changes are needed to improve control 2. Evaluate changes made 3. Evaluate effectiveness of treatment plan 4. Learn how body responds to different events <p>B. Advantages</p> <ol style="list-style-type: none"> 1. Accurate reflection of blood glucose levels at the time of testing 2. Blood glucose monitoring results provide information to make adjustment in diabetes management/care plan <ol style="list-style-type: none"> a. During illness b. During physical activity c. Documentation of hypoglycemic events d. Effects of food choices on blood glucose levels 3. Reduces risk of complications through tighter control <ol style="list-style-type: none"> a. Able to see patterns b. Prevent problems from low and high blood 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 <p>C. Disadvantages</p> <ol style="list-style-type: none"> 1. Cost 2. Meters require invasive testing through skin <p>D. Types of testing equipment</p>	<p><i>brainstorm personal benefits of monitoring blood glucose and list on whiteboard.</i></p> <p>○ _____</p> <p>Handout: <i>Resource Guide</i></p> <p>Videos: <i>How to Check Your Blood Glucose, The Need for Blood Glucose Monitoring and Record Keeping, Choosing and Caring for Your Meter</i></p> <p>○ _____</p> <p>Discussion: <i>Review factors for</i></p>
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Monitoring

<p>Describe factors to consider when selecting blood glucose monitoring equipment.</p>	<ol style="list-style-type: none"> 1. See ADA Resource Guide E. Types of lancet devices <ol style="list-style-type: none"> 1. See ADA Resource Guide F. Factors to consider when choosing blood glucose monitoring equipment <ol style="list-style-type: none"> 1. Degree of blood glucose control desired 2. Characteristics of the individual <ol style="list-style-type: none"> 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 3. Characteristics of the various methods and materials <ol style="list-style-type: none"> 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 	<p><i>individuals who have not yet chosen equipment.</i></p> <p>○ _____</p>
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Monitoring

<p>List factors that can affect self-blood glucose monitoring test results.</p>	<ol style="list-style-type: none"> 1. Advantages <ol style="list-style-type: none"> a. Can use other sites such as forearm, upper arm, thigh, palm b. Provides accurate reading if not hypoglycemic or immediate post-meal 2. Guidelines for use <ol style="list-style-type: none"> 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 (e.g. after exercise, during illness, before driving) c. Persons with hypoglycemic unawareness should not use alternative sites <p>H. Frequency of Testing</p> <ol style="list-style-type: none"> 1. Considerations <ol style="list-style-type: none"> 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 	
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Monitoring

<p>State when to do self-blood glucose monitoring.</p> <p>Describe the steps in self-blood glucose monitoring.</p>	<p>decisions?</p> <ol style="list-style-type: none"> h. What is the attitude of the person toward BG testing? i. Are there financial limitations that may pose a barrier to BG testing? j. Are there other medical conditions? k. Is there illness or stress? <ol style="list-style-type: none"> 2. Helpful times to test include one or more of the following: <ol style="list-style-type: none"> a. Fasting b. Before meals c. Two hours after a meal d. Bedtime 3. Other times when it is important to test: <ol style="list-style-type: none"> 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 I. Procedure for blood glucose monitoring <ol style="list-style-type: none"> 1. Steps: - follow steps as outlined in the manual for each individual meter 2. Tips: <ol style="list-style-type: none"> 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 water or use an alcohol swab d. Lance a different site on the fingers with 	<ul style="list-style-type: none"> ○ Handout: <i>Timing Blood Sugar Test to Assess the Effect of Insulin Dose</i> ○ _____
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Monitoring

<p>Explain the importance of keeping diabetes test records.</p> <p>Identify information to include in monitoring book.</p>	<p>each test</p> <ul style="list-style-type: none"> e. Use the side of the finger rather than the tip 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 <p>3. Recording results</p> <ul style="list-style-type: none"> a. Important to help with <ul style="list-style-type: none"> i. Knowing if blood glucose is at target goal ii. Identifying blood glucose patterns iii. Identifying reasons for blood glucose patterns iv. Make needed changes in the diabetes management/care plan v. 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 <p>4. Share logbook information with the diabetes care team and discuss results with them</p>	<ul style="list-style-type: none"> ○ Handout: <i>Disposal Tips</i> ○ _____ ○ Model/Handouts: <i>Sharps Disposal Container, Samples,</i>
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Monitoring

<p>Describe proper care of blood glucose monitoring equipment.</p> <p>Describe the steps in testing urine ketones.</p> <p>State when to test urine ketones.</p>	<p>regularly</p> <ol style="list-style-type: none"> Determine if daily tests results reflect quarterly A1C Call sooner than appointment if pattern of hypo and hyperglycemia is noted <p>J. Care of equipment</p> <ol style="list-style-type: none"> Check expiration dates of test strips Keep meters clean Strips are sensitive to light, moisture and temperature; keep covered and dry Avoid heat/freezing which can alter results Know how to get equipment/supplies when needed <p>V. Urine testing for ketones</p> <p>A. Purpose: to screen for ketoacidosis</p> <p>B. Testing</p> <ol style="list-style-type: none"> When blood glucose is <ol style="list-style-type: none"> Type 1: ≥ 240 mg/dl <u>Pediatric/Type 1: >240mg/dl</u> Unexplained BG $\geq 240 - \geq 300$ mg/dl on 2 consecutive occasions Illness/stress Pregnancy, if provider recommends Insulin pump users when BG ≥ 240-300 mg/dl (may indicate failure in insulin delivery) <p>C. Tests for ketones</p> <ol style="list-style-type: none"> Acetest Ketostix Keto-Diastix 	<p><i>Disposal Tips</i></p> <ul style="list-style-type: none"> ○ _____ ○ Discussion: <i>Success/problem solving related to monitoring</i> ○ _____ ○ Activity: <i>Self-Blood Glucose Monitoring Record Book, Practice use of SBGM record book—times to test, recording results, highlighting goals met/not met.</i> ○ _____ ○ Models: <i>Urine Ketone Testing Supplies</i> ○ _____ ○ Handout: ○ <i>Testing Your Urine for Ketones, Checking for Ketones</i>
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Monitoring

<p>State the need to contact health care provider if urine ketones are positive.</p>	<ol style="list-style-type: none"> 4. Chemstrip UGK or K 5. Dia Screen IK 6. Dia Screen 2 GK 7. Keto Care Ketone Test <p>D. Contact health care provider with results for appropriate treatment recommendations</p> <ol style="list-style-type: none"> 1. Report positive ketones (moderate or high) to health care provider or follow sick day guidelines taught by educator <p>VI. Blood Testing for Ketones</p> <p>A. Precision Xtra meter and test strips measure blood glucose as well as blood ketones</p> <p>VII. Continuous Glucose Testing</p> <p>A. How it works</p> <ol style="list-style-type: none"> 1. Monitors glucose from interstitial fluid 2. Sensor-type device transmits signal to a monitor that captures data continuously 3. Measurement period – up to 7 days <p>B. Purpose</p> <ol style="list-style-type: none"> 1. Diagnostic and prescriptive use <ol style="list-style-type: none"> 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 <p>C. Devices</p> <ol style="list-style-type: none"> 1. Dexcom 	
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Monitoring

<p>Define estimated average glucose (EAG).</p>	<ol style="list-style-type: none"> 2. Ipro 3. Enlight Sensor <p>VIII. Glycosolated Hemoglobin (GHb)</p> <p>A. Description</p> <ol style="list-style-type: none"> 1. Glucose attaches to proteins in the body 2. Hemoglobin molecule is one of the proteins 3. Average life of red blood cell is three months. 4. Concentration of GHb reflects mean blood glucose over preceding 6-10 weeks 5. Indicates risk for potential complications of diabetes <p>B. Advantages</p> <ol style="list-style-type: none"> 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 <p>C. Disadvantages</p> <ol style="list-style-type: none"> 1. Interfering factors (hemoglobinopathies) may affect measurement of A1C depending on the method <p>D. Frequency</p>	<ul style="list-style-type: none"> ○ Model: <i>Red Blood Cell with Glucose Attached, A1C Pillow</i> ○ _____ ○ Discussion: <i>Glazed donut analogy. Ask participants if they know their most recent A1C value</i> ○ _____ ○ Video: <i>A1C and Long-Term Complications</i> ○ _____ ○ Handout: <i>Comparison Chart for A1C and eAG (estimated average glucose)</i> ○ _____
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Monitoring

<p>Describe how to adjust diabetes management care plan based on blood glucose results.</p>	<ol style="list-style-type: none"> 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 <p>IX. Estimated Average Glucose (eAG)</p> <ol style="list-style-type: none"> A. eAG is being reported together with A1C by some labs B. Reported in the same units as self-blood glucose monitoring tests (mg/dl) C. 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 <p>X. Fructosamine</p> <ol style="list-style-type: none"> A. Definition - a glycated serum protein test that measures glycemic control over 2 to 3 weeks <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> 1. Pregnancy 2. Individuals with abnormal hemoglobin cells 	<ol style="list-style-type: none"> o Discussion: <i>Ask participants if they have ever needed to have a fructosamine measured</i> o _____
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Monitoring

	<p>(ex. Sickle Cell Anemia)</p> <p>XI. Pattern Control</p> <p>A. Steps in pattern control:</p> <ol style="list-style-type: none"> 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 <p>B. Self-Care</p> <ol style="list-style-type: none"> 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 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 patterns of glucose above target 6. Use monitoring results to problem solve and work with the diabetes care team 	<ul style="list-style-type: none"> ○ Handout: <i>Pattern Samples</i> ○ _____ ○ Discussion: <i>Use Pattern Samples example to discuss actions to take to adjust diabetes management.</i> ○ _____ ○ Handout: <i>Patient Counseling Card</i> ○ _____
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Monitoring

Behavioral Objective	Instructor's Notes
<p>Make a plan for one thing s/he will do to monitor his/her blood glucose.</p> <p>Demonstrate a method of record keeping for self-blood glucose monitoring results.</p> <p>If diabetes management/care plan includes ketone testing, demonstrate urine ketone testing correctly with the testing material s/he uses.</p>	<p>Review behavioral objectives.</p> <p>Making behavior changes, such taking monitoring blood glucose, is easier when a person:</p> <ul style="list-style-type: none"> • Gathers information • Makes plans • Breaks plans down into small steps <p>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.</p> <p>Handout: <i>Personal Goal(s)/Behavior Change Plan</i></p> <p>Review Tab: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p>

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.
- ❑ State importance of informing family and friends about hypoglycemia and how they can recognize and assist with treatment if necessary.

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.
- ❑ 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

Videos:

Treating Hypoglycemia (Diabetescare.net)

Understanding Hypoglycemia (Diabetescare.net)

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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¹ Preventing, Detecting and Treating Acute Complications

Learning Objective	Content	Instructor's Notes
State the causes, symptoms, treatment, and prevention of hypoglycemia.	<p>I. General</p> <ul style="list-style-type: none"> 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 potential acute and chronic complications E. Acute complications can happen any time, even when paying careful attention to balancing food, physical activity and medications. This happens because there are many variables that can affect blood sugar, i.e. stress, trauma, illness etc. <p>II. Hypoglycemia</p> <ul style="list-style-type: none"> A. Definition <ul style="list-style-type: none"> 1. Any blood glucose level <70 mg/dl or <80 with symptoms 	<ul style="list-style-type: none"> ○ Review learning objectives. ○ _____ ○ Discussion: <i>Define hypoglycemia by examining each syllable (Hypo= low, Glyc=sugar, Emia=blood)</i> ○ _____

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<p>Describe his/her symptoms of hypoglycemia.</p> <p>State that hypoglycemia can occur without symptoms, especially during the night.</p>	<ol style="list-style-type: none"> 2. Person with diabetes may or may not be symptomatic; symptoms vary from person to person 3. Most commonly occurs in people with diabetes taking oral medications with hypoglycemia side effects and/or insulin. 4. May occur in patients who are not on oral medications or insulin, but may indicate other medical issues <ol style="list-style-type: none"> a. Addison's disease b. Reactive hypoglycemia 5. Usually sudden onset <p>B. Causes</p> <ol style="list-style-type: none"> 1. Too much diabetes medication—insulin/some oral (See <i>Medications</i> module) or taking wrong kind of medicine (i.e. switching long- and short-acting insulin) 2. Skipped or delayed meals/snacks 3. Increased physical activity 4. Alcohol 5. Stress <p>C. Symptoms/Detection</p> <ol style="list-style-type: none"> 1. Early Stage: <ol style="list-style-type: none"> a. Weakness b. Faintness c. Tiredness d. Shakiness e. Dizziness f. Sweaty, clammy (cold, moist skin) g. Tachycardia/fluttering in chest h. Hunger 	<ul style="list-style-type: none"> ○ Handout: <i>Hypoglycemia</i> ○ _____ ○ Discussion: <i>Use participant experiences with symptoms when possible. Case presentation as alternative.</i> ○ _____
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3 | Preventing, Detecting and Treating Acute Complications

	<ul style="list-style-type: none"> i. Irritability j. Anxiety k. Nervousness l. Visual disturbances m. Paleness (pallor) n. Numbness, tingling lips <p>2. Mid-Stage:</p> <ul style="list-style-type: none"> a. Headache b. Mental confusion c. Combativeness d. Poor coordination e. Slurred speech f. Personality change g. Sudden mood change <p>3. Late Stage:</p> <ul style="list-style-type: none"> a. Convulsions b. Loss of consciousness (usually blood glucose <20 mg/dl) <p>4. Individual Symptoms</p> <ul style="list-style-type: none"> a. Each person with diabetes and their family/friends/coworkers need to identify their own symptoms for hypoglycemia <p>5. Hypoglycemia Unawareness</p> <ul style="list-style-type: none"> a. Typically for people with Type 1 diabetes b. Some individuals may not experience any symptoms indicating hypoglycemia c. Hypoglycemia unawareness can occur during the night while sleeping d. Individuals with hypoglycemia unawareness may need to test blood 	<ul style="list-style-type: none"> ○ <i>Game: Participant assigns/places symptoms (card with word and picture) to/on hypoglycemia or hyperglycemia column of board.</i> ○ _____
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4 | Preventing, Detecting and Treating Acute Complications

<p>Identify diabetes identification and carbohydrate source they will carry for treatment of hypoglycemia.</p>	<p>glucose more frequently and may need to keep their blood sugar at a slightly higher level until symptoms of hypoglycemia return</p> <ol style="list-style-type: none"> 6. Relative hypoglycemia <ol style="list-style-type: none"> a. Feeling of hypoglycemia at normal blood glucose level b. Partial treatment for hypoglycemia will help them adapt to lower blood glucose. Five grams of carbs may increase blood glucose slightly. c. Lowering blood glucose gradually may help to prevent D. Treatment <ol style="list-style-type: none"> 1. Test first; if unable to test right away, treat first. 2. Rule of “15” <ol style="list-style-type: none"> a. If blood glucose is < 70 mg/dl, consume 15 grams of rapid acting 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 someone is using NPH or Regular insulin, and 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 3. Sources of 15 grams of carbohydrate 	<ul style="list-style-type: none"> ○ Role Play: <i>Hypoglycemia symptoms and treatment.</i> ○ _____ ○ Discussion: <i>Develop a hypoglycemia treatment plan with participant to post on their refrigerator at home.</i> ○ _____
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5 | Preventing, Detecting and Treating Acute Complications

	<ul style="list-style-type: none"> a. Starch List (slower to digest) <ul style="list-style-type: none"> i. 6 saltine-type crackers ii. 3 graham crackers iii. 8 animal crackers b. Fruit List <ul style="list-style-type: none"> i. ½ cup juice ii. 2 tbsp. raisins c. Milk List <ul style="list-style-type: none"> i. 1 cup milk d. Other Carbohydrates <ul style="list-style-type: none"> i. 4 ounces of soda ii. 1 tbsp. honey or sugar e. Commercial Products <ul style="list-style-type: none"> i. 3-4 Glucose tablets 4. Treatment of late stages <ul style="list-style-type: none"> a. Glucagon can be injected if person is unconscious or unable to follow commands to eat or drink <ul style="list-style-type: none"> i. Available with physician prescription ii. Indications for use iii. Administration technique iv. Potential for vomiting after administration (turn patient on side to prevent aspiration) v. Storage expiration date b. Call 911 E. Prevention <ul style="list-style-type: none"> 1. Review diabetes management/care plan, including self-care behaviors 2. Know when hypoglycemia is most likely to happen 	<ul style="list-style-type: none"> ○ Models: <i>Carbohydrate Source Samples</i> ○ _____ ○ Handout: <i>Sources of 15 Grams of Carbohydrate</i> ○ _____ ○ Discussion: <i>Review use of glucose tablets or milk for people on alpha glucosidase inhibitors.</i> ○ _____
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6 | Preventing, Detecting and Treating Acute Complications

<p>State importance of informing close friends about hypoglycemia and how they can recognize and assist with treatment if necessary.</p>	<ol style="list-style-type: none"> 3. Plan for changes in meals/snacks, physical activity, and/or medication; avoid sudden changes 4. Encourage to eat meals/snacks on a schedule. When using NPH, Regular or sulfonylureas do not skip or delay meals. Have a snack if a meal is missed. 5. Take correct dose of insulin or diabetes pills as prescribed 6. Individuals taking insulin <ol style="list-style-type: none"> a. May need extra food for extra activity (i.e. tennis, swimming, extra housework, extra activity other than daily routine) b. Test blood glucose before bedtime. If <100 mg/dl, may need an additional bedtime snack c. Recommend testing blood glucose at 2am to ensure not having hypoglycemia 7. Extra precautions: Recommend the following <ol style="list-style-type: none"> a. Wear or carry diabetes identification b. Carry a carbohydrate source or glucose tablets or gels for emergency c. Educate family & friends about causes, symptoms, treatment and prevention of hypoglycemia d. Plan for physical activity e. Monitor blood glucose often f. Avoid or limit alcohol <p>III. Hyperglycemia</p>	<ul style="list-style-type: none"> ○ Discussion: <i>Have participant share what they do to be prepared in case of a hypoglycemic episode.</i> ○ _____ ○ Discussion: <i>Participants share the type of diabetes identification and carbohydrate source they are carrying.</i> ○ _____ ○ Handout: <i>Wallet Identification Card, Diabetes Identification</i> ○ _____
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<p>States the causes, symptoms, treatment and prevention of hyperglycemia.</p>	<p>A. Definition: Blood glucose above target goals</p> <p>B. General: High blood glucose can cause other chronic and acute problems if it is high for a long time.</p> <p>C. Extreme high glucose can be a life-threatening situation</p> <p>D. Causes</p> <ol style="list-style-type: none"> 1. Deviations from meal plan <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> a. Other hormonal changes b. Some medications <p>E. Signs and symptoms of hyperglycemia</p> <ol style="list-style-type: none"> 1. Excessive urination 2. Excessive thirst 3. Tiredness 4. Excessive hunger with weight loss 5. Blurring of vision 6. Dizziness 7. Moodiness 8. Life Threatening <ol style="list-style-type: none"> a. Diabetic Ketoacidosis (DKA) [typically 	<ul style="list-style-type: none"> ○ Discussion: <i>Define hyperglycemia by examining each syllable: Hyper= high, Glyc= sugar, Emia= blood</i> ○ _____ ○ Handout: <i>Hyperglycemia</i> ○ _____ ○ Discussion: <i>Use participant experiences with symptoms when possible. Case presentation as alternative. Focus on key point applicable to the participant(s).</i> ○ _____
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<p>Define diabetic ketoacidosis and identify possible causes, symptoms, treatment and prevention.</p>	<p>Type 1]</p> <ol style="list-style-type: none"> i. Elevated glucose ii. Loss of appetite iii. Acetone on breath (fruity smell) iv. Lipolysis, ketones v. Nausea and vomiting, abdominal pain vi. Hot, dry, flushed skin vii. Electrolyte imbalance (K+ loss) viii. Hyperventilation ix. Altered consciousness state, drowsiness x. Dehydration xi. Kussmaul respirations (rapid, deep breathing) xii. Acidosis, unconsciousness xiii. Mortality 5% <p>F. Hyperglycemic Hyperosmolar Non-ketotic Syndrome (HHNS) [typically Type 2]</p> <ol style="list-style-type: none"> 1. Severe hyperglycemia >600 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 9. Altered consciousness state, drowsiness 10. Dehydration 11. Seizures, appearance of cerebrovascular accident-like signs and symptoms 12. Mortality 15-25% with 50% severe cases 	<ul style="list-style-type: none"> ○ Game: <i>Participant assigns/places symptoms (card with word and picture) to/on hypoglycemia or hyperglycemia column of board.</i> ○ _____ ○ Role Play: <i>Hyperglycemia symptoms and treatment.</i> ○ _____
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<p>Describe the progression of untreated hyperglycemia to DKA or HHNS.</p>	<p>G. Treatment</p> <ol style="list-style-type: none"> 1. Hyperglycemia <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> i. The level of high blood glucose that will lead to acute or serious problems will vary among people with diabetes e. Call health care provider: <ol style="list-style-type: none"> i. If blood glucose stays above target for more than a week ii. Ketones are present iii. 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 <ol style="list-style-type: none"> a. Prompt recognition and treatment of problems b. Follow sick day guidelines at home with provider guidance c. Hospitalization may be necessary if <ol style="list-style-type: none"> i. Need to lower ketone level 	
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	<ul style="list-style-type: none"> ii. Need to lower blood glucose iii. Need to restore fluid and electrolyte balance <p>3. Hyperglycemic Hyperosmolar Non-ketotic Syndrome – HHNS</p> <ul style="list-style-type: none"> a. Prompt recognition and treatment of problems b. Hospitalization may be necessary to restore fluid and electrolyte balance and to treat the underlying cause. <p>H. Prevention</p> <ul style="list-style-type: none"> 1. Stay at target blood glucose goals 2. Take diabetes medications as prescribed 3. Follow sick day guidelines; see health care team for illness and infection when indicated 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 10. Discuss with diabetes care team prior to surgery and/or procedures that may lead to hyperglycemia 	
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<p>Explain the somogyi phenomenon and its prevention and treatment.</p>	<p>IV. Somogyi Phenomenon</p> <ul style="list-style-type: none"> A. Definition: Rebound elevation of blood glucose, glycosuria B. Cause <ul style="list-style-type: none"> 1. Hypoglycemia episode mobilizes body defenses, such as epinephrine and glucagon, causing glycogen stores from the liver to be converted to glucose 2. Sometimes this mechanism overshoots the body's need for glucose and leads to hyperglycemia C. Diagnosis/Monitoring <ul style="list-style-type: none"> 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. Importance of blood glucose monitoring whenever changes in insulin dosage are made D. Treatment: Consult with health care provider to decrease medication appropriately E. Consider testing blood glucose between 2-3am to check for hypoglycemia or professional continuous glucose monitoring if suspected <p>V. Dawn Phenomenon</p> <ul style="list-style-type: none"> A. Definition: Unexplained gradual rise in blood 	<ul style="list-style-type: none"> ○ Handout: <i>Sample SBGM Record Illustrating Somogyi</i> ○ _____ ○ Discussion: <i>Share participant experiences with somogyi phenomenon if possible; case study as alternative.</i> ○ _____
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<p>Describe the dawn phenomenon and its treatment.</p>	<p>glucose level in the morning</p> <p>B. Cause: Secretion of insulin antagonist hormones during sleep</p> <ol style="list-style-type: none"> 1. Growth hormone 2. Cortisol 3. Catecholamines 4. Glucagon <p>C. Diagnosis: Blood glucose monitoring at bedtime, 3:00 A.M. and fasting</p> <p>D. Treatment</p> <ol style="list-style-type: none"> 1. Give intermediate insulin dose at bedtime 2. Insulin pump – Adjust basals to accommodate each individual's blood glucose trends 	
<p>State how concurrent illness may affect diabetes.</p> <p>Describe the management of sick days.</p>	<p>VI. Sick Day Guidelines</p> <p>A. Effect of illness on diabetes</p> <ol style="list-style-type: none"> 1. Increased blood glucose in most cases, but may have decreased blood glucose (importance of monitoring more frequently, even if not eating) 2. Increased insulin needs 3. Ketones may be 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, although rare 6. Individuals with Type 2 diabetes may develop Hyperglycemic Hyperosmolar Nonketotic 	<ul style="list-style-type: none"> ○ Handout: <i>Sick Day Guidelines</i> ○ _____

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	<p>Syndrome without presence of ketones in urine</p> <p>B. Care/Health Care Team Consult</p> <ol style="list-style-type: none"> 1. Depending on medication regime, may take usual dose of medication, even if unable to eat. Consult with health care team. 2. Monitor blood glucose every 2 to 4 hours 3. Monitor urine for ketones if blood glucose is 240 mg/dl if instructed 4. Keep eating, even if not feeling well, small amounts of carbohydrates 5. Take liquids every hour. <ol style="list-style-type: none"> a. If not eating, liquids containing 10 to 15 g. carbohydrate are recommended (i.e. ½ cup ginger ale, cola or juice). b. If eating, liquids remain vital and may be sugar-free (water, broth, tea) depending on blood glucose. c. If ketones or nausea, vomiting or diarrhea take salty beverage such as broth to help with rehydration 6. Guidelines for increasing insulin dosage <ol style="list-style-type: none"> a. Follow health care provider instructions b. Use regular or rapid-acting insulin for “extra” doses c. Extra insulin recommended for blood glucose > 240 mg/dl <u>and</u> moderate to large ketones. Small doses may be prescribed for blood glucose > 240 mg/dl without ketones present 	<ul style="list-style-type: none"> ○ Handout: <i>Foods to Replace Meals During Brief Illness</i> ○ _____ ○ <i>Carbohydrate Content of Liquid and Soft Foods</i> ○ _____ ○ Model: <i>Sick Day Kit</i> ○ _____ ○ Discussion: <i>Ask participants to verbalize or write down their sick day plan.</i> ○ _____
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<p>Describe guidelines for emergency preparedness</p>	<ol style="list-style-type: none"> 7. Rest. Do not exercise. 8. Sick Day Kit <ol style="list-style-type: none"> a. Prepare items/foods needed for sick days ahead of time and keep in special place <p>VII. Notification of health care provider</p> <ol style="list-style-type: none"> A. Clarify notification criteria with their health care provider B. General recommendations for notifying provider: <ol style="list-style-type: none"> 1. Rising urine ketone levels 2. Ketones in urine for more than 12 hours 3. Sick with a cold or flu for more than two days that is impacting blood glucose 4. Vomiting or diarrhea or if unable to keep any liquids down 5. Other symptoms that are unusual or may be due to a serious problem, such as feeling drowsy, faint, increasing pain, weakness and/or fast/troubled breathing 6. New and quick onset of symptoms of dehydration such as dry, flushed skin, dry mouth, or decreased urination 7. Temperature rises to > 101.5 F <p>VIII. Guidelines for Emergency Preparedness</p> <ol style="list-style-type: none"> A. Food & Water – 7-10 day supply on hand B. Medication 	<ul style="list-style-type: none"> ○ Activity: <i>Make a sick day kit.</i> ○ _____ ○ Role play: <i>How to get ready and what to do in an emergency</i> ○ _____
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	<ol style="list-style-type: none"> 1. Two-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) <p>C. Medical Supplies</p> <ol style="list-style-type: none"> 1. Two-week supply of lancets, glucose meter strips, and other supplies you use 2. Extra batteries for pumps and meters <p>D. Emergency Bag - in case you need to leave home</p> <ol style="list-style-type: none"> 1. Medication list 2. Medications and supplies for 7-10 days 3. Medical papers like insurance cards 4. Bring refrigerated medication <p>E. People who can help</p> <ol style="list-style-type: none"> 1. Make a plan of action with family and friends 2. Make list of people who can help <ol style="list-style-type: none"> a. Family and friends b. Neighbors c. Hospital d. Medical suppliers e. Doctor/home care provider f. Pharmacy <p>F. Create an Emergency Health Information Card</p> <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> a. Name 	
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	b. Address c. Phone d. Birth date e. Blood type f. Health insurance information g. Physicians h. Emergency contacts i. Conditions, disability j. Medication k. Assistance needed l. Allergies m. Immunization dates n. Communication needs o. Special equipment needs	
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Behavioral Objective	Instructor's Notes
Make a plan for one thing she/he will do to manage hypoglycemia, hyperglycemia and sick days.	<p>Review behavioral objectives.</p> <p>Making behavior changes, such managing hypoglycemia, hyperglycemia and sick days, is easier when a person:</p> <ul style="list-style-type: none"> • Gathers information • Makes plans • Breaks plans down into small steps <p>Assist participants with applying concepts learned in the session to his/her personal diabetes</p>

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	<p>care/self-care, including an action plan that identifies at least one self-selected goal and the knowledge and skills to achieve it.</p> <p>Handout: <i>Personal Goal(s)/Behavior Change Plan</i></p> <p>Review Tab: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p>
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Preventing, 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 she/he needs on a regular basis to decrease/monitor complications.

Intermediate/Advanced Level:

- ❑ State that controlling blood glucose, blood pressure, and blood lipids reduce 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).
- ❑ 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 she/he will do to reduce his/her risk for long-term diabetes complications.
- ❑ Demonstrate daily foot inspection and care.

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:

Understanding the Need for Skin and Foot Care (MF/Diabetescare.net)
Exercise Strengthens the Heart (MF/Diabetescare.net)

Models:

5.07 Semmes-Weinstein Sensory Monofilament (Patterson Medical)
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 Oral Health ([National Institute of Dental and Craniofacial Research](#))
Take Care of Your Feet For A Lifetime! ([ADA](#))
Taking Care of Your Diabetes Means Taking Care of Your Heart ([NDEP](#))
Prevent Diabetes Problems Series ([NIDDK](#))
 Keep Your Diabetes Under Control
 Keep Your Heart and Blood Vessels Healthy
 Keep Your Eyes Healthy
 Keep Your Kidneys Healthy
 Keep Your Nervous System Healthy
 Keep Your Feet Healthy
 Keep Your Mouth Healthy
Take Care of Your Feet for a Lifetime ([NDEP](#))

Handouts/Visuals:

Be Smart About Your Heart: 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 ([PC](#), ADA, NDEP, SD)
Nervous System (LWD)
Sexual Health Resource List (SD)
Shoe Buying Guide (PC, SD)
Smoking Cessation Resources (Maine CDC)

AADE= American Association of Diabetes Educators **ADA**= American Diabetes Association **AND**= Academy of Nutrition and Dietetics **AHEC**=Area Health Education Center **HHM**= DPCP 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

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Learning Objective	Content	Instructor's Notes
<p>State that controlling blood glucose, blood pressure and blood lipids reduces the chance of complications.</p> <p>Identify reasons for regular health monitoring.</p>	<p>I. Introduction</p> <p>A. Review diabetes self-care behaviors, including reducing risks</p> <p>B. Review role of healthy eating/meal planning, physical activity, medication, and other self-care behaviors in diabetes control</p> <p>C. Review the goal of diabetes management to control blood glucose and prevent/delay complications</p> <p>II. Overview</p> <p>A. General</p> <p>1. Individuals with both type 1 and type 2 diabetes are at risk for chronic complications</p> <p>B. Types of complications – general (details below with each complication)</p> <p>1. Vascular</p> <p>a. Macrovascular:</p> <p>i. Coronary atherosclerosis (CAD, MI)</p> <p>ii. Cerebrovascular atherosclerosis (CVA, PVD)</p> <p>b. Microvascular:</p> <p>i. Retinopathy</p>	<ul style="list-style-type: none"> ○ Review learning objectives. ○ _____ ○ Discussion: <i>Review blood glucose goals.</i> ○ <i>Discuss key tests and exams to screen for and monitor complications.</i> ○ _____ ○ Booklet: <i>Keep Your Diabetes Under Control</i> ○ _____ ○ Handout: <i>Clinical Practice Recommendations</i> ○ _____

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<p>Identify contributing risks to diabetes complications including tobacco use.</p> <p>List the major complications of diabetes.</p> <p>Identify the organ systems particularly at risk from diabetes.</p>	<ol style="list-style-type: none"> ii. Nephropathy 2. Neuropathic <ol style="list-style-type: none"> 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 C. General Prevention of Complications <ol style="list-style-type: none"> 1. Primary & Secondary Prevention <ol style="list-style-type: none"> a. Blood glucose, blood pressure and blood lipid control b. Eliminate contributing risks c. Screening for complications d. Standards of care e. Clinical practice recommendations f. Interventions to prevent progression to end stage complications and disability g. All regular diabetes care 2. Contributing Risks <ol style="list-style-type: none"> a. Tobacco use <ol style="list-style-type: none"> i. Tobacco use increases risk of all complications ii. Explore current use/interest in quitting/readiness b. Obesity 	<ul style="list-style-type: none"> ○ Handout: <i>My Personal Care Card, Participant completes with assistance.</i> ○ _____ ○ Discussion: <i>Review meaning of “risks”. Ask participants to brainstorm risks for diabetes complications and list on whiteboard. Have them identify personal risks they can change.</i> ○ _____ ○ Handout: <i>Maine Tobacco Helpline, Tobacco Treatment Medication Chart, Smoking Cessation Resources</i> ○ _____ ○ Discussion: <i>Ask</i>
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<p>Describe the key outcomes of the DCCT.</p> <p>Describe the key outcomes of the UKPDS.</p> <p>Identify strategies to decrease his/her risks for complications.</p>	<ul style="list-style-type: none"> i. Weight control options c. Inactivity <ul style="list-style-type: none"> i. Physical activity options d. Alcohol <ul style="list-style-type: none"> i. Alcohol information/cessation options e. Other health problems <ul style="list-style-type: none"> i. Screening ii. Regular visits with the health care team <p>III. Relationship of blood glucose control to chronic complications</p> <p>A. Landmark studies: UKPDS and DCCT showed improvement in diabetes complications and reducing risk from improved blood glucose control</p> <p>B. Other studies supporting the UKPDS and DCCT include the ACCORD trials</p> <p>C. Basic message is that a lower A1C, BP and cholesterol reduces the risk of diabetes complications using diet, exercise and medications.</p> <p>IV. Vascular</p> <p>A. Macrovascular (large blood vessel) disease</p> <p>1. Risk Factors:</p> <ul style="list-style-type: none"> a. Uncontrolled blood glucose b. Diabetes 	<p><i>participants what parts of the body may be affected by diabetes. (list on board)</i></p> <ul style="list-style-type: none"> ○ <i>Model: Body Apron</i> ○ _____ <ul style="list-style-type: none"> ○ <i>Handout: Graph of Complication Reduction in DCCT/UKPDS</i> ○ _____
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<p>Describe self-care practices for preventing complications.</p> <p>Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.</p> <p>Describe the prevention, recognition, and treatment of the major complications of diabetes.</p> <p>Describe the major symptoms and factors in prevention and treatment of cardiovascular and peripheral vascular disease.</p> <p>State the importance of screening for dyslipidemia.</p>	<ul style="list-style-type: none"> i. Review recommended blood glucose and A1C goals; See <i>Monitoring Session</i> c. Hypertension d. Hyperlipidemia e. Personal A1C, BP and LDL goals <ul style="list-style-type: none"> i. Set by patient and diabetes care team ii. Personal goals may be different than recommended goals iii. Personal goals depend on age, current A1C/BP/LDL, diabetes management/care plan, ability to do self-care, etc. iv. May change v. 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 <ul style="list-style-type: none"> i. Renal failure and microalbuminuria may contribute to risk of macrovascular disease; 	
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<p>Identify recommended and personal A1C, blood pressure and LDL cholesterol goals.</p> <p>State that high blood pressure increases the risk of eye, kidney, and heart disease.</p> <p>State the need for control of high blood pressure.</p> <p>State the need for regular blood pressure monitoring.</p> <p>Identify strategies to decrease his/her risks for complications.</p> <p>Describe self-care practices for preventing complications.</p> <p>Describe key tests/exams he/she needs on a regular</p>	<p>recommended management: screen annually</p> <p>i. Intervening to reduce risk factors improves diabetes outcomes</p> <p>2. Coronary Artery Disease</p> <p>a. Diabetes increases risk 2-3 fold in men, and 3-4 fold in women</p> <p>b. May not have symptoms due to neuropathy ("Silent MI") or atypical symptoms</p> <p>c. Low dose aspirin may have benefits. See ADA Guidelines.</p> <p>d. Additional self-care/preventive measures:</p> <p>i. Low-dose aspirin therapy</p> <p>3. Cerebrovascular disease</p> <p>a. Diabetes increases risk 2-6 fold</p> <p>b. Lower risk by modifying risk factors</p> <p>c. Symptoms may be confused with hypoglycemia symptoms</p> <p>d. Additional self-care/preventive measures:</p> <p>i. Understands stroke symptoms and the importance of early intervention</p> <p>4. Peripheral vascular disease</p> <p>a. Diabetes accounts for >50% of all non-traumatic amputations</p>	<p>o Model: <i>Heart, Blood Vessels with Plaque</i></p> <p>o _____</p> <p>o Booklet: <i>Keep Your Heart and Blood Vessels Healthy</i></p> <p>o _____</p> <p>o Video: <i>Exercise Strengthens the Heart</i></p> <p>o _____</p>
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<p>basis to decrease/monitor complications.</p>	<ul style="list-style-type: none"> b. Often coexists with impaired sensation from neuropathy c. Related to age, duration of diabetes, elevated blood glucose levels and smoking d. Detection <ul style="list-style-type: none"> i. Intermittent claudication present ii. Decreased pulses in lower extremities iii. Diagnose may include noninvasive Doppler studies e. Treatment <ul style="list-style-type: none"> i. Exercise ii. Medication (vasodilators) iii. Surgery f. Additional self-care and preventive measures: <ul style="list-style-type: none"> i. Foot care and foot ulcer prevention <p>5. Hypertension</p> <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> i. Monitor blood pressure (BP) 	<ul style="list-style-type: none"> ○ Discussion: <i>Review blood glucose goals.</i> ○ <i>Discuss key tests and exams to screen for and monitor complications.</i> ○ _____
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7 | Preventing, Detecting and Treating Chronic Complications

<p>Describe the major symptoms and factors in prevention and treatment of eye disease.</p> <p>State the need for a dilated eye exam at diagnosis and an annual dilated eye exam thereafter.</p>	<p>as recommended by primary care provider and at least each visit</p> <p>ii. Maintain blood pressure at < 130/80 (see current standards)</p> <p>f. Treatment</p> <p>i. Weight reduction</p> <p>ii. Nutritional considerations</p> <p>iii. Alcohol: <2 oz/day</p> <p>iv. Physical activity</p> <p>v. Tobacco cessation</p> <p>vi. Pharmacologic treatment: see current ADA Guidelines and Joint Committee guidelines</p> <p>g. Self-Care/Preventive measures:</p> <p>i. No additional self-care measures</p> <p>V. Microvascular diseases</p> <p>A. Retinopathy</p> <p>1. Definition: Damage to the blood vessels in the retina (tissue at the back of the eye)</p> <p>2. May cause various degrees of visual loss, including blindness</p> <p>3. Risk factors:</p> <p>a. Uncontrolled blood glucose</p> <p>b. Hypertension</p> <p>c. Tobacco use</p>	<p>○ Discussion: <i>Ask participants if they know their last BP reading and if they record it. Refer to My Personal Care Card.</i></p> <p>○ _____</p> <p>○ Discussion: <i>Review blood glucose goals.</i></p> <p>○ <i>Discuss key tests and exams to screen for and monitor complications.</i></p> <p>○ _____</p> <p>○ Model: <i>Eye/Retina</i></p>
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8 | Preventing, Detecting and Treating Chronic Complications

<p>Describe the major symptoms and factors in prevention and treatment of kidney disease.</p>	<ol style="list-style-type: none"> 4. Detection <ol style="list-style-type: none"> a. Generally asymptomatic until permanent damage is done b. Recommend dilated eye exam every 1-2 years as recommend by eye care provider 5. Treatment <ol style="list-style-type: none"> a. Better outcomes when detected early b. May include injections and laser surgery c. Rehabilitation resources for visually impaired 6. Additional self-care/preventive measures: <ol style="list-style-type: none"> a. Annual eye exam and report vision changes promptly 7. People with diabetes may also be at increased risk for: <ol style="list-style-type: none"> a. Glaucoma b. Cataracts (twofold risk for people with diabetes) 8. Visual effects of blood glucose variations <ol style="list-style-type: none"> a. High or low blood glucose levels can affect vision b. Results from changes in hydration of the lens c. Blood glucose control should be stabilized before visit to eye doctor <p>B. Nephropathy</p> <ol style="list-style-type: none"> 1. Prevalence <ol style="list-style-type: none"> a. 20-30% of individuals with type 1 	<ul style="list-style-type: none"> ○ _____ ○ Booklet: <i>Keep Your Eyes Healthy</i> ○ _____ ○ Discussion: <i>Ask participants when they last had a dilated eye exam. Refer to My Personal Health Care Card.</i> ○ _____ ○ Discussion: <i>Review blood</i>
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9 | Preventing, Detecting and Treating Chronic Complications

<p>State the importance of screening for urine protein.</p> <p>Identify strategies to decrease his/her risks for complications.</p> <p>Describe self-care practices for preventing complications.</p> <p>Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.</p>	<p>develop nephropathy</p> <p>b. 20-30% of individuals with type 2 develop nephropathy (higher in some groups)</p> <p>2. Risk factors</p> <p>a. Uncontrolled blood glucose</p> <p>b. Hypertension may precipitate the onset and accelerate the process of renal disease</p> <p>c. Neurogenic bladder causes urinary retention and obstruction</p> <p>d. Urinary infection and obstruction</p> <p>e. Drugs toxic to kidneys (i.e. chronic analgesic abuse, X-ray dye)</p> <p>3. Detection and referral</p> <p>a. Annual monitoring of renal function for all persons with diabetes</p> <p>i. Annual Microalbuminuria screening</p> <p>ii. Serum creatinine with calculated glomerular filtration rate (GFR)</p> <p>b. Refer to nephrologist if persistent proteinuria, elevated serum creatinine or blood urea nitrogen (BUN), or hypertension unresponsive to treatment</p> <p>4. Treatment</p>	<p><i>glucose goals.</i></p> <ul style="list-style-type: none"> ○ <i>Discuss key tests and exams to screen for and monitor complications.</i> ○ _____ ○ <i>Model: Kidney</i> ○ _____ ○ <i>Booklet: Keep Your Kidneys Healthy</i> ○ _____
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10 | Preventing, Detecting and Treating Chronic Complications

<p>Describe the major symptoms and factors in the prevention and treatment of neuropathy.</p>	<ul style="list-style-type: none"> a. Blood pressure control b. ACE inhibitor (angiotensin-converting enzyme) or ARB (angiotensin receptor blocker) for microalbuminuria c. Blood glucose control d. Treat infections e. Low protein diet for later stages of kidney disease f. End-stage kidney disease treatable with dialysis and renal transplantation <p>5. Additional self-care/preventive measures:</p> <ul style="list-style-type: none"> a. Observe and report symptoms, such as suspected urinary tract infection b. Understand and discuss risks and benefits of recommended therapies, options for treatment and course of disease c. Limit sodium <p>VI. Neuropathic</p> <p>A. Sensorimotor</p> <p>1. Peripheral neuropathy</p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> ○ Discussion: <i>Review blood glucose goals.</i> ○ <i>Discuss key tests and exams to screen for and monitor complications.</i> ○ _____
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¹¹ | Preventing, Detecting and Treating Chronic Complications

	<p>pain</p> <p>d. Risk factors:</p> <p>i. Uncontrolled blood glucose</p> <p>e. Late stage foot ulceration and Charcot's Joint</p> <p>f. Detection:</p> <p>i. Foot exam</p> <p>ii. Monofilaments</p> <p>g. Treatment may include:</p> <p>i. Medications for neuropathy and pain control</p> <p>h. Additional self-care/preventive measures:</p> <p>i. Daily self-foot exam</p> <p>B. Autonomic neuropathy</p> <p>1. Types include:</p> <p>a. Gastroparesis - manifested by nausea, vomiting and abdominal discomfort</p> <p>b. Diabetic diarrhea</p> <p>i. Usually intermittent</p> <p>ii. Frequent loose stools, particularly after meals and at night</p> <p>c. Neurogenic bladder - gradual loss of ability to void</p> <p>d. Impaired cardiovascular reflexes</p> <p>i. Orthostatic hypotension</p> <p>ii. Increased heart rate</p> <p>e. Impotence</p> <p>f. Anhidrosis – lack of sweating in</p>	<p>o Discussion: <i>Review blood glucose goals.</i></p> <p>o <i>Discuss key tests and exams to screen for and monitor complications.</i></p> <p>o _____</p>
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12

State that diabetes may cause sexual dysfunction and identify resources for help.

Identify strategies to decrease his/her risks for complications.

Describe self-care practices for preventing complications.

- feet leading to dry, cracked feet
 - 2. Risk factors:
 - a. Uncontrolled blood glucose
 - 3. Detection:
 - a. Usually based on clinical evaluation
 - 4. Treatment:
 - a. Blood glucose control
 - b. Medical management of symptoms
 - c. Some drug therapies may be helpful for pain
 - d. Physical therapy often helpful
 - 5. Additional self-care/preventive measures:
 - a. Report additional symptoms to physician
- C. Sexual Health and Diabetes
- 1. 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
 - i. 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

- [illegible]

13

Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications

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<p>State how to prevent foot ulcers.</p>	<p>health:</p> <ul style="list-style-type: none"> 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 e. Treatment: <ul style="list-style-type: none"> i. Discuss concerns with health professional ii. Optimum control of blood glucose iii. Hormone replacement iv. Psychological counseling v. Vacuum therapy vi. Penile injection vii. Penile implant viii. Surgery ix. Medications <p>3. Additional self-care:</p> <ul style="list-style-type: none"> a. Importance of men and women with diabetes having open communication with partners and health care team regarding sexual concerns <p>VII. Mixed vascular/neuropathic complications</p> <p>A. Includes leg and foot ulcers</p>	<ul style="list-style-type: none"> ○ <i>Discussion: Review blood glucose goals.</i> ○ <i>Discuss key tests and exams to screen for and monitor complications.</i> ○ _____ ○ <i>Handout: Nervous System</i> ○ _____
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¹⁵ Preventing, Detecting and Treating Chronic Complications

<p>State the value of foot exams at health care provider visits.</p>	<ol style="list-style-type: none"> 1. General <ol style="list-style-type: none"> 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 complications <ol style="list-style-type: none"> i. Untreated problems can lead to infection and potentially to amputation ii. Most amputations from diabetes are preventable with appropriate care B. Foot ulcers <ol style="list-style-type: none"> 1. Risk factors: <ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> ○ Booklet: <i>Keep Your Nervous System Healthy</i> ○ _____ ○ Discussion: <i>Review blood glucose goals.</i> ○ <i>Discuss key tests and exams to screen for and monitor complications.</i> ○ _____
<p>Describe the purpose and procedure for monofilament testing.</p>		<ul style="list-style-type: none"> ○ Model: <i>Foot, 5.07 SW monofilament</i> ○ _____ ○ Video: <i>Understanding the Need for Skin and Foot Care</i> ○ _____

16 | Preventing, Detecting and Treating Chronic Complications

<p>List self-care practices to prevent foot problems.</p> <p>Describe how to correctly trim toenails.</p>	<ul style="list-style-type: none"> h. Dyslipidemia i. Microvascular complication j. Tobacco use 2. Prevention: <ul style="list-style-type: none"> a. Screening for high risk conditions b. Timely referral for preventive services for those at risk 3. Treatment: <ul style="list-style-type: none"> a. Medical interventions may be necessary 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. Additional self-care/preventive measures: <ul style="list-style-type: none"> a. Foot inspection, nail care, footwear selection and use, and reporting problems b. Modify environment to prevent minor foot trauma (night lights, clear walking space) c. Obtain annual screening and monitoring tests at recommended frequency C. Foot care <ul style="list-style-type: none"> 1. General <ul style="list-style-type: none"> a. Protect feet from exposure to extreme heat or cold <ul style="list-style-type: none"> i. Avoid heating pads, electric 	<ul style="list-style-type: none"> ○ Handout: <i>What to Know Head to Toe</i> ○ _____ ○ Demonstration: <i>Perform monofilament screening exam on participant or foot model.</i> ○ _____ ○ Role play: <i>Removing</i>
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<p>Describe how to inspect and bathe feet.</p>	<p>blankets, hot water bottles and microwave warmers which can cause burns</p> <ul style="list-style-type: none"> ii. Check bath temperature with elbow, not feet iii. Inspect feet after exposure to extreme heat or cold <ul style="list-style-type: none"> b. Avoid going barefoot c. Wear appropriate footwear d. Put sunscreen on tops of feet when feet exposed to sun e. Remove shoes and socks when visiting physician as a reminder to check feet f. Exercise legs to improve circulation g. Avoid tight socks or other clothing that could cut off circulation h. Do not use over-the-counter remedies to treat corns/calluses <ul style="list-style-type: none"> i. Cut toenails straight across, round edges with a file, do not cut into corners; may be easiest to trim after bathing i. Shake out or feel inside shoes with hand for foreign objects before putting them on j. Visit podiatrist as necessary <p>2. Daily care of feet</p> <ul style="list-style-type: none"> a. Wash feet daily with mild soap and warm water and gently dry with 	<p><i>shoes and socks at health care provider visit</i></p> <ul style="list-style-type: none"> ○ _____ ○ <i>Activity: Patient demonstration of self-foot inspection.</i> ○ _____ ○ <i>Model: Shoes/Socks</i> ○ _____ ○ <i>Activity: Demonstrate how to outline foot on paper to use for checking shoe size.</i> ○ _____ ○ <i>Handout: Shoe Buying Guide</i> ○ _____
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	<p>soft towel, especially between the toes. Do not soak feet.</p> <ul style="list-style-type: none"> 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. <p>3. Reporting foot problems</p> <ul style="list-style-type: none"> a. Report any injuries or foot problems to health care provider right away b. Minor non-infected wounds: <ul style="list-style-type: none"> i. Consult with your health care provider if not resolved in 24 hours <p>4. Footwear</p> <ul style="list-style-type: none"> a. Wear shoes and socks that fit properly. 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 	
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19 | Preventing, Detecting and Treating Chronic Complications

<p>Describe the correct treatment of minor cuts and bruises.</p> <p>Identify strategies to decrease his/her risks for complications.</p> <p>Describe self-care practices for preventing complications.</p> <p>Describe key tests/exams he/she needs on a regular basis to</p>	<ul style="list-style-type: none"> 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 recommended (check with insurance company) <p>VIII. Infections</p> <p>A. Importance of skin care</p> <ul style="list-style-type: none"> 1. Decreased circulation and elevated blood glucose causes slow healing of injuries 2. Early discovery and treatment of skin breakdown can prevent serious complications <ul style="list-style-type: none"> 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 <p>B. Prevention of infections</p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> ○ <i>Discuss key tests and exams to screen for and monitor complications.</i> ○ _____
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<p>decrease/monitor complications.</p> <p>Describe signs and symptoms of infection and when to seek care.</p> <p>Identify strategies to decrease his/her risks for complications.</p> <p>Describe self-care practices for preventing complications.</p> <p>Describe key tests/exams he/she needs on a regular basis to decrease/monitor complications.</p> <p>List components of dental care.</p>	<p>not to break skin</p> <p>6. Contact health care providers for treatment of infection</p> <p>C. Detection of infections</p> <ol style="list-style-type: none"> 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 <p>IX. Periodontal disease</p> <p>A. Importance of dental care</p> <ol style="list-style-type: none"> 1. Increased risk of periodontal disease <ol style="list-style-type: none"> 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 <p>B. Detection & Symptoms:</p> <ol style="list-style-type: none"> 1. Bleeding as a result of brushing 2. Gums pulled away from teeth 	<ul style="list-style-type: none"> ○ <i>Discussion: Review blood glucose goals.</i> ○ <i>Discuss key tests and exams to screen for and monitor complications.</i> ○ _____ ○ <i>Model: Teeth and Gums, Oral Care Supplies</i> ○ _____ ○ <i>Booklet: Keep Your Teeth and Gums Healthy, Diabetes and Periodontal Disease</i> ○ _____
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	<ol style="list-style-type: none"> 3. Pus between teeth and gums 4. Bad breath 5. Loose teeth 6. Change in how bridge, partial plate, or dentures fit <p>C. Additional self-care/preventive measures:</p> <ol style="list-style-type: none"> 1. Brush after meals 2. Use fluoride toothpaste or mouth rinse 3. Floss daily 4. Examine gums daily - note any bleeding or sores on gums 5. Check with dentist at first sign of infection 6. Inform dental health personnel that you have diabetes 7. Regular dental visits every six months 8. Follow any individualized instructions for daily care 9. If you cannot eat regular meals due to dental work or tooth problems, follow sick day guidelines for soft or liquid diet 	
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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.	<p>Review behavioral objectives.</p> <p>Making behavior changes, such reducing risks for long-term complications, is easier when a person:</p>

Preventing, Detecting and Treating Chronic Complications

<p>Demonstrate daily foot inspection and care.</p> <p>.</p>	<ul style="list-style-type: none"> • Gathers information • Makes plans • Breaks plans down into small steps <p>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.</p> <p>Handout: <i>Personal Goal(s)/Behavior Change Plan</i></p> <p>Review Tab: <i>Promoting Health and Behavior Change</i> for information on goal setting and action plans as needed.</p>
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Definitions

Advisory 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)/ Diabetes Self-Management Education and Support (DSMES) Program – a quality diabetes education program in Maine that meets the National Standards for Diabetes Self- Management Education and Support. These are all synonymous terms here in the State of Maine.

Annual Program 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/environmental choices such as healthy eating, regular physical activity, and tobacco-free environments 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, tobacco-free environments and other medical therapies to prevent disease progression and/ or 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— external to the program DSMES are activities, evidence-based programs and services designed 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 yet all typically are external to the health care systems services.

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".

<u>FEET-INCHES</u>	<u>INCHES</u>	<u>FEET-INCHES</u>	<u>INCHES</u>
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"

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 DSMES 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.
- 2018 National Standards for Diabetes Self-Management Education and Support removed the DSMT anonym from most current Standards of Medicare in Diabetes. The terminology for these services will now be written and referenced in all documents as DSMES services.

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:

<https://www.ncbde.org/>

Internet Websites: Diabetes-Related

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

ADA Patient Education Library: <http://professional2.diabetes.org/PatientEducationLibrary.aspx>

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 Federation – <https://www.idf.org/>

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) -
<https://www.cdc.gov/diabetes/prevention/index.html>

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. 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.

Clarify roles and responsibilities.

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?

(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

(3) ATTITUDES AND HEALTH
BELIEFS

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

Stage 1 - Disbelief

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

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

Stage 2 - Resistance

"It won't get me down."

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

What things in life are you looking
forward to?

How do you feel about having diabetes?

Do you have concerns about your health?

Do you know anyone who has or had
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?

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.

(4) SOCIAL SUPPORTS:

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

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...."

Tell me about your family.

Tell me about the people 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?

How has diabetes affected them (family and friends)?

(5) LIFE STYLE:

Ask open-ended questions to obtain information which provides clues to the person's life style.

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?

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?

(6) LEARNING STYLE
AND READINESS
TO LEARN

Use a health literacy assessment to
Document health literacy

How do you prefer to learn something
new?

- Demonstrations
- Reading - What do you like to read?
- By doing
- Audiovisuals
- Talking to other people
- Other

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.

What information about diabetes would you like most to learn in class?

Encourage family members to attend.

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).

Prediabetes: Resources

Awareness Campaigns

Small Steps. Big Rewards. Prevent Type 2 Diabetes.

National Diabetes Education Program

<https://www.niddk.nih.gov/health-information/communication-programs/ndep>

Curricula

Prevent T2 curriculum (NEW)

<https://www.cdc.gov/diabetes/prevention/lifestyle-program/curriculum.html>

Lifestyle Change Program. Diabetes Prevention Program.

www.bsc.gwu.edu/dpp/lifestyle/dpp_part.html

Diabetes Prevention Program Materials

National Diabetes Prevention Program (NDPP)

<http://www.cdc.gov/diabetes/prevention/>

Diabetes Prevention Program

<https://www.niddk.nih.gov/about-niddk/research-areas/diabetes/diabetes-prevention-program-dpp>

[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

Fact Sheets

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 Association: Standards of Medical Care in Diabetes-2018. Diabetes Care. January 2018, Vol. 41, Supplement 1, S1-S159.

See also Standards of Practice (SOP) under this link:

<http://www.eatrightpro.org/resources/practice/quality-management/standards-of-practice>

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.sweetsucsessexpress.com

Organizations

American College of Obstetricians and Gynecologists

www.acog.org

American Diabetes Association

www.diabetes.org

Academy of Nutrition and Dietetics

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

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 most current *National Standards for Diabetes Self-Management Education and Support*.
- 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

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 healthy 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.
- You 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.

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.

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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AGENDA

ANNUAL PROGRAM REVIEW & PLAN—XX-XX-20XX

(The Annual Program Review is the yearly evaluation by the oversight/advisory system of Diabetes Self-Management Education and Support (DSMES) operations and performance. Using this review, an Annual Program Plan is developed, tracked, and executed. This is a Strategic Plan and Review document to support DSMES Program Management. 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 DSMES operations Review status of goals and/or objectives established for the DSMES entity and, based on the review, develop new goals for the upcoming year.
2.	Data analysis of DSMES operations Analysis and review of participant access data and follow-up rates and other relevant data.
3.	Mission statement of DSMES Review the mission statement and appropriateness to DSMES operations. Revise if necessary.
4.	Organizational structure of DSMES Review the organizational structure to assess if the current structure is meeting the needs of the DSMES operations and participants. Include a copy of the Organizational Chart showing the DSMES operations in the agenda packet.
5.	Population served by DSMES Analysis and review of participant population data, who is your program's target population, and how the DSMES program is meeting the needs of the population it is serving.
6.	Resources of DSMES 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) <ul style="list-style-type: none">a. Personnelb. Budgetc. 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.	<p>Outcome data measurements of DSMES participants and operations</p> <p>Evaluate effectiveness of DSMES program based on the data collected from the participants' individualized behavioral goal and the program outcome measure.</p> <p>Review the Continuous Quality Improvement project. Present hard data with this item.</p> <ul style="list-style-type: none"> a. Behavior Change Objectives—data analysis b. Program Outcome Measure—data analysis c. Continuous Quality Improvement—project analysis/review
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MINUTES—XX-XX-20XX (Template)

ANNUAL PROGRAM REVIEW & PLAN

(The Annual Program Review is the yearly evaluation by the oversight/advisory system of DSMES 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 DSMES operations

Review status of goals and/or objectives established for the DSMES 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 DSMES 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 DSMES

Review the mission statement and appropriateness to DSMES 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 DSMES

Review the organizational structure to assess if the current structure is meeting the needs of the DSMES operations and participants. Include a copy of the Organizational Chart showing the DSMES operations in the agenda packet and include a copy in this "Minutes" document.

Discussion:

Population served by DSMES

Analyze your program's participant population data, identify who is your program's target population, and how the DSMES program is meeting the needs of the population it is serving. Write it here.

Discussion:

Resources of DSMES

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 DSMES participants and operations

Evaluate effectiveness of DSMES 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:

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 EDUCATION AND SUPPORT (DSMES) PROGRAM

Letter of Understanding for Calendar Year 20XX

This is a *Letter of Understanding* between the Maine CDC – Chronic Disease Prevention and Control Program (CDPCP), hereinafter referred to as “Department” and

hereinafter referred to as “Provider”

(Sponsoring Agency/Institution)

describing responsibilities of each party in presenting the DSMES Program. The DSMES Program is delivered as a part of a statewide effort supporting diabetes self-management training.

The Provider will:

1. Establish a written institutional policy committing to the creation, delivery, and maintenance of the DSMES Program at the site.
2. Deliver the DSMES Program in accordance with guidelines and criteria outlined in the DSMES Program Manual.
3. Designate a Coordinator and Instructors to coordinate and implement the DSMES Program at the site. Coordinator and Instructor responsibilities are listed in the DSMES Program Manual.
4. Obtain continuing education annually (coordinator, instructors) as outlined in the DSMES Program Manual. New instructors must attend the Professional Diabetes Educator Program Training.
5. Designate a Physician Advisor for the DSMES Program at the site. The Advisor’s responsibilities are listed in the DSMES Program Manual.
6. Offer the DSMES Program at least four (4) times annually.
7. Designate a standing Advisory/Oversight Committee for the site’s DSMES Program. Composition and responsibilities of the Committee are listed in the DSMES Program Manual.
8. Allocate sufficient funds to the DSMES Program budget to cover program expenses.
9. Encourage and support the DSMES Program Coordinator and Instructors to attend continuing education workshops.
10. Document participant encounters (e.g. assessment, plan of care, clinical and behavioral outcomes) using DSMES Program data forms, computer software, or other electronic software of the site’s choice.
11. Participate in site visits conducted by the CDPCP on an as needed basis.
12. Submit to the Department (CDPCP) 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 the Department (CDPCP) within 30 days of any changes related to Education Recognition Program status including notification of loss or reinstatement of Education Recognition.

14. This LOU must be submitted to the Department (CDPCP) not later than January 31st of the current calendar year.
15. To the extent that the services carried out under this Agreement involve the use, disclosure, access to, acquisition or maintenance of information that actually or reasonably could identify an individual or consumer receiving benefits or services from or through the Department ("Protected Information"), the Provider agrees to a) maintain the confidentiality and security of such Protected Information as required by applicable state and federal laws, rules, regulations and Department policy, b) contact the Department within 24 hours of a privacy or security incident that actually or potentially could be a breach of Protected Information and c) cooperate with the Department in its investigation and any required reporting and notification of individuals regarding such incident involving Protected Information. To the extent that a breach of Protected Information is caused by the Provider or one of its subcontractors or agents, the Provider agrees to pay the cost of notification, as well as any financial costs and/or penalties incurred by the Department as a result of such breach.

The Department will:

1. Coordinate and conduct the Professional Diabetes Educator Program (PDEP) Training for newly designated DSMES Program coordinators and instructors on a scheduled basis defined by the Department.
2. Provide ongoing educational consultation and technical assistance to each DSMES Program site as requested by site personnel.
3. Audit each site's file annually to assure adherence to quality standards.
4. Conduct on-site site visits as necessary.
5. Serve as a liaison between the site and third-party payers to assist sites in securing reimbursement for the DSMES Program.
6. Maintain bi-annually for the State of Maine Bureau of Insurance the DSMES program site registry to ensure State recognition which qualifies sites for DSMES reimbursement.
7. Inform sites of the current status and availability of all DSMES programs and activities including those provided by internal and external partners.
8. Inform sites of continuing medical education programs in the prevention, detection, treatment, and control of diabetes and diabetes-related complications.
9. 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 EDUCATION AND SUPPORT (DSMES) PROGRAM

Letter of Understanding for Calendar Year 20XX

Please ensure that this LOU is completed and returned to the Maine CDPCP not later than January 31, 20XX.

1. Sponsoring Institution/Provider: _____

Address of Primary Site: _____

Names & Addresses of Secondary or Satellite DSMES Sites:

2. Coordinator: Name: _____ Credentials: _____

Mailing Address: _____

Phone: _____ Email address: _____

3. Instructors (must include at least 1 RN and 1 RD):

Name: _____ Credentials: _____

Mailing Address: _____

Phone: _____ Email address: _____

Name: _____ Credentials: _____

Mailing Address: _____

Phone: _____ Email address: _____

Name: _____ Credentials: _____
Mailing Address: _____

Phone: _____ Email address: _____

Name: _____ Credentials: _____
Mailing Address: _____

Phone: _____ Email address: _____

Name: _____ Credentials: _____
Mailing Address: _____

Phone: _____ Email address: _____

Name: _____ Credentials: _____
Mailing Address: _____

Phone: _____ Email address: _____

Name: _____ Credentials: _____
Mailing Address: _____

Phone: _____ Email address: _____

4. Physician Advisor: Name: _____ Credentials: _____

Mailing Address: _____

Phone: _____ Email address: _____

This administrator affirms that the institution and the people listed above, are complying with the requirements stated in this Letter of Understanding and will continue to do so during this authorization period.

(Sponsoring Institution Administrator)

(Date)

(Maine CDC, Division of Disease Prevention, Director)

(Date)

Diabetes Self-Management Education/Training and Medical Nutrition Therapy Services Order Form

Patient Information

Patient's Last Name	First Name	Middle
Date of Birth ____/____/____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	
Address	City	State Zip Code
Home Phone	Other Phone	E-mail address

Diabetes self-management education and training (DSME/T) and medical nutrition therapy (MNT) are individual and complementary services to improve diabetes care. Both services can be ordered in the same year. Research indicates MNT combined with DSME/T improves outcomes.

Diabetes Self-Management Education/Training (DSME/T)

Check type of training services and number of hours requested

- | | |
|--|--|
| <input type="checkbox"/> Initial group DSME/T: | <input type="checkbox"/> 10 hours or ____ no. hrs. requested |
| <input type="checkbox"/> Follow-up DSME/T: | <input type="checkbox"/> 2 hours or ____ no. hrs. requested |
| <input type="checkbox"/> Telehealth | |

Patients with special needs requiring individual (1 on 1) DSME/T

Check all special needs that apply:

- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Vision | <input type="checkbox"/> Hearing | <input type="checkbox"/> Physical |
| <input type="checkbox"/> Cognitive Impairment | <input type="checkbox"/> Language Limitations | |
| <input type="checkbox"/> Additional training | <input type="checkbox"/> additional hrs requested ____ | |
| <input type="checkbox"/> Telehealth | Other ____ | |

DSME/T Content

- | | |
|--|--|
| <input type="checkbox"/> Monitoring diabetes | <input type="checkbox"/> Diabetes as disease process |
| <input type="checkbox"/> Psychological adjustment | <input type="checkbox"/> Physical activity |
| <input type="checkbox"/> Nutritional management | <input type="checkbox"/> Goal setting, problem solving |
| <input type="checkbox"/> Medications | <input type="checkbox"/> Prevent, detect and treat acute complications |
| <input type="checkbox"/> Preconception/pregnancy management or GDM | |
| <input type="checkbox"/> Prevent, detect and treat chronic complications | |

Medicare coverage: 10 hrs initial DSMT in 12 month period from the date of first class or visit

DIAGNOSIS

Please send recent labs for patient eligibility & outcomes monitoring

- | | |
|--------------------------------------|---------------------------------|
| <input type="checkbox"/> Type 1 | <input type="checkbox"/> Type 2 |
| <input type="checkbox"/> Gestational | Diagnosis code ____ |

Complications/Comorbidities

Check all that apply:

- | | | |
|--|---------------------------------------|----------------------------------|
| <input type="checkbox"/> Hypertension | <input type="checkbox"/> Dyslipidemia | <input type="checkbox"/> Stroke |
| <input type="checkbox"/> Neuropathy | <input type="checkbox"/> PVD | |
| <input type="checkbox"/> Kidney disease | <input type="checkbox"/> Retinopathy | <input type="checkbox"/> CHD |
| <input type="checkbox"/> Non-healing wound | <input type="checkbox"/> Pregnancy | <input type="checkbox"/> Obesity |
| <input type="checkbox"/> Mental/affective disorder | Other ____ | |

Medical Nutrition Therapy (MNT)

Check the type of MNT and/or number of additional hours requested

- | | |
|---|--|
| <input type="checkbox"/> Initial MNT | <input type="checkbox"/> 3 hours or ____ no. hrs. requested |
| <input type="checkbox"/> Annual follow-up MNT | <input type="checkbox"/> 2 hours or ____ no. hrs. requested |
| <input type="checkbox"/> Telehealth | <input type="checkbox"/> Additional MNT services in the same calendar year, per RD |

Additional hrs. requested ____

Please specify change in medical condition, treatment and/or diagnosis:

Medicare coverage: 3 hrs initial MNT in the first calendar year, plus 2 hrs follow-up MNT annually. Additional MNT hours available for change in medical condition, treatment and/or diagnosis.

Definition of Diabetes (Medicare)

Medicare coverage of DSMT and MNT requires the physician to provide documentation of a diagnosis of diabetes based on one of the following:

- a fasting blood sugar greater than or equal to 126 mg/dl on two different occasions;
- a 2 hour post-glucose challenge greater than or equal to 200 mg/dl on 2 different occasions; or
- a random glucose test over 200 mg/dl for a person with symptoms of uncontrolled diabetes.

Source: Volume 68, #216, November 7, 2003, page 63261/Federal Register.

Other payors may have other coverage requirements.

Signature and NPI # _____ Date ____/____/____

Group/practice name, address and phone: _____