**Replication Report**

# Healthy Changes™

A Community-Based Diabetes
Education and Support Program

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**Healthy Changes**™, the evidence-based model program developed by Providence Center on Aging in Portland, Oregon and implemented through the Portland (OR) Steering Committee under the leadership of Elders in Action, is both an educational and support program designed to assist older adults in the day-to-day self-management of diabetes. It focuses on the roles nutrition and physical activity play in the management of the disease. The program offers weekly group meetings in which participants learn information about exercise and physical activity as it relates to diabetes. Participants have an opportunity to discuss personal goals and achievement of those goals, receive problem-solving help and support from other group attendees, and learn about community resources available to help them.

Partners in this project included Elders in Action, Providence Health System (previously through the Providence Center on Aging), the Oregon Research Institute, and Multnomah County Aging and Disability Services.

Members of the Portland Steering Committee included consumers, senior services providers, healthcare providers, experts in diabetes and geriatrics, and researchers. The organizations and agencies represented were: Elders in Action; Providence Health System; Oregon Research Institute; American Diabetes Association; Animas Corporation; Oregon Health Services, Diabetes Prevention and Control Program; Clackamas County Department of Human Services; and Oregon Medical Professional Review Organization.

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## I. INTRODUCTION/BACKGROUND

### Scope and Seriousness of Diabetes

Diabetes is a chronic disease in which the body does not produce or properly use insulin—the hormone that converts food into energy. With diabetes the body does not get the energy it needs and glucose (un-metabolized sugar) builds up in the blood, damaging the body.[1]

Approximately 21 million Americans, or about 7 percent, have diabetes, about 21 percent of those are older than 60. Diabetes occurs more frequently in some populations, including African Americans, Latinos, Native Americans, and Asian American/Pacific Islanders.

There are three major types of diabetes: Type 1, Type 2, and gestational. Each has slightly varying symptoms and treatments, but all have serious consequences if left untreated. Type 2 is the most common form of diabetes, and the risk of developing it increases with age.[2]

The better someone with diabetes controls their blood glucose levels, the less likely they are to develop complications such as heart disease, stroke, blindness, kidney disease, and nerve damage, or to require an amputation. Much of the responsibility for managing diabetes falls on the individual with the disease. Self-management regimens include blood glucose monitoring, diet, physical activity, weight loss, and medication management.[3]

### Healthy Changes™ Can Help

Healthy Changes™ was developed to provide assistance to older adults faced with the challenge of managing their diabetes. It includes a unique combination of programs developed by the Providence Center on Aging and Elders in Action to address the educational and support needs of older adults with diabetes and the problem-solving and advocacy needs of individuals with health problems. Program components include:

- **Education.** The educational component consists of 26 didactic diet and physical activity-related topics presented by either a trained peer leader or an individual knowledgeable about diabetes. Because the program is designed to be continuous, topics are repeated as dictated by the needs of the group. Being able to use a trained peer leader avoids relying on healthcare professionals, who may not be accessible or who may expect compensation your program can't afford.

- **Support.** During the support phase of the program, participants discuss issues relevant to their own self-management goals. Group members report on their success in reaching the previous week's goals and set new or revised goals for the upcoming week. As group members review their weekly plans, other members help problem solve any barriers encountered. Participants use tools such as diet and activity logs are used to monitor their success. They also learn how to reward themselves when they meet their personal goals.

- **Connecting with community assets.** Connections to community resources are critically important for individuals' success in self-managing their diabetes. Participants share information about useful community resources such as cooking classes, exercise programs, and the availability of various diabetes supplies.

- **Group discussion.** During the group discussion, members share ideas for working effectively with healthcare providers, especially participants' primary care physicians. Elders in Action provides trained Personal Advocates, who offer one-on-one assistance to help participants identify problems, locate resources, and explore solutions.

### Why Healthy Changes™ Works

A review of numerous studies about diabetes self-management shows that interventions focused on diet and/or physical activity have positive outcomes for several indicators, including reduced fat intake and calories, improved glycemic control, and increased exercise.[4]

A 1999 community needs survey conducted in Oregon by the public health division of the Department of Human Services found that people with diabetes find diet and physical activity the most challenging to manage consistently. The literature also suggests that successful diabetes self-management is linked less to knowledge about a particular condition and more to setting reasonable goals, problem solving skills, and peer support.[5]

Healthy Changes™ was implemented to help program participants:

- Increase their knowledge about diet and physical activity and how they relate to diabetes self-management.

- Learn how to set reasonable goals and solve problems related to common diet and physical activity issues.

- Become better prepared to work with healthcare providers to secure treatment and obtain the information necessary to effectively treat diabetes.

### The Importance of an Evidence-Based Program

In general, a gap exists between research findings and applications in practice. Numerous randomized clinical trials have been published on the effectiveness of programs to promote health. However, few studies have been completed on the dissemination of effective behavioral health interventions. Evidence-based guidelines, such as those for behavioral counseling strategies from the U.S. Preventive Services Task Force, are very important, but more effort is needed to put these guidelines into practice. These findings are useless if the interventions are not conducted in settings in which they are most likely to be implemented.

In the case of diabetes, self-management education and research conducted in clinic settings are costly, with considerable barriers. The programs reach only a minority of

those in need of self-management education and support. The vast majority of diabetes education research studies have been conducted with highly motivated, self-selected samples, and many randomized clinical trials do not include diverse populations. Evidence-based programs conducted in community settings, such as Healthy Changes™, can address many of these limitations.

### Partnering for Healthy Changes™

Development, training, evaluation, and oversight of Healthy Changes™ were provided by a partnership of four organizations: a community-based advocacy organization for older adults (Elders in Action), a large integrated healthcare system (Providence Health System, Portland, OR), a research agency, (Oregon Research Institute), and the local Area Agency on Aging (AAA). Individual organizations that implemented the program included senior centers operated through the local AAA, a senior center operated by a city agency, a congregate meal site, a housing authority agency, a faith-based organization, and a health clinic serving the Native-American population. This mix of public and non-profit entities, as well as health and community programs, enabled Healthy Changes™ to be offered to a broad audience with a particular emphasis on low-income and multi-ethnic groups.

### Benefits and Obstacles

A survey of site coordinators found that the greatest benefits to their agencies were the support of other programs, the strengthening of their relationship with the community, bringing new people to their center, educating the staff about diabetes and community resources, and the cultivation of new trained peer leaders. Greater agency visibility was not reported as a benefit.

Respondents reported a variety of obstacles to program implementation. The most frequently mentioned challenges included difficulties with trained peer leaders, an inadequate number of interested participants, and an already full site schedule. A few reported financial constraints and inadequate numbers of eligible participants.

Coordinators commented that the program offered a “great opportunity to share information and help others make positive changes,” that “the participants were great,” that it was “a good program that empowered participants,” and that they were “contributing to practical and successful research-based strategies that really worked.”

### Healthy Changes™: An Evidence-Based Strategy for People with Diabetes

Educational resources for individuals with diabetes have been limited to formal diabetes education programs most commonly operated by hospitals. These programs are designed for people newly diagnosed with diabetes, are short and intensive in nature, require a physician’s referral, and are often expensive if the individual’s insurance doesn’t cover the service.

While these programs have been shown to be beneficial and are an important part of diabetes management, they cannot meet the needs of all individuals with diabetes. In this context, the Healthy Changes™ program is another step on the continuum of educational and support resources available to those with the disease. By offering an

ongoing, free community program, we now have greater ability to help more people with diabetes improve their self-management skills and confidence.

## II. PLANNING AND PARTNERS

### Identify Local Needs and Data

When planning for the Healthy Changes™ program, it is important to identify the populations at risk for diabetes and other applicable epidemiological data. A significant source of information is the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is a partnership between the Centers for Disease Control and Prevention (CDC) and state health departments. Its purpose is to conduct ongoing surveys that provide epidemiological data such as the incidence, prevalence, and other measures of behavioral risk factors in the adult population (18 years of age or older). A recent 2006 survey contains more than 10 questions about diabetes, including family history, diagnosis, adherence to treatment regimens, and education received.

Since diabetes is an important health issue, most states have many diabetes-related activities, programs, and services. It is important to understand what is currently happening within the state and where gaps exist. For example, formal diabetes education programs are often unavailable in very rural areas. Another frequently noted gap exists in the availability of ongoing community-based support for those with diabetes. Most agencies in the aging services network cannot afford to offer these kinds of programs because of a lack of reimbursement beyond self pay. These or other gaps in service can often serve as the primary incentive for bringing an interested group together to work on implementing Healthy Changes™. This focus on gaps helps shape which partners should be involved and also dictates implementation strategies.

### Selecting Partners

Potential partners for Healthy Changes™ include:

- ***Local affiliates of the American Diabetes Association***
  Local organizations affiliated with the American Diabetes Association have professionals and volunteers with relevant diabetes education and referral expertise and resources. They may be able to provide a list of diabetes resources in the area.

- ***Hospitals and health systems***
  Many hospitals and health systems have certified diabetes educators (CDEs) with professional training and expertise in diabetes self-management, and many CDEs have the experience necessary to train peer leaders. Other resources include physicians, pharmacists, dieticians, and physical therapists who can provide expert guidance and serve as guest speakers.

- ***Diabetes coalitions***
  Many communities have local coalitions of agencies focused on improving the access, availability, and quality of healthcare for people with diabetes.

- ***State health division***
  State health professionals have expertise in a wide variety of community health issues. They often have Certified Health Education Specialists on staff who can train

volunteer group leaders and epidemiologists with information about the prevalence of diabetes in the local community.

- ***Public health agencies***
  Non-profit and publicly funded state, county, and local agencies and organizations often provide free and/or sliding-scale healthcare services and may assist with training or help locate resources.

- ***Universities***
  Academic training programs can often provide trainees or faculty to assist with project activities such as evaluation, resource gathering, or recruitment.

- ***Medical or nursing schools***
  Licensed professionals may have expertise in diabetes self-management and can provide expert guidance or serve as guest speakers.

- ***Extension services***
  Local extension programs have experts in nutrition and can provide guest speakers and resource materials.

- ***Diabetes Educators' Association***
  The state Diabetes Educators' Association is the professional organization for nurses and dieticians who work as diabetes educators and can provide expert speakers, as well as a host of diabetes information.

- ***Area Agencies on Aging or State Units on Aging***
  These agencies are focal points for senior services mandated by the Older Americans Act in communities throughout the country. They can serve as sites for Healthy Changes programs.

- ***Community groups with a history and knowledge of particular sub-groups***
  For example, local members of the National Indian Council on Aging, the National Hispanic Council on Aging, or the Asian-American Pacific Islander Coalition, can offer guidance on enhancing the cultural relevance of the program.

**Creating Successful Partnerships**

The answers to four key questions help estimate the potential for success with these types of programs. Ideally, partners will respond positively to each question before moving forward with implementation. If not, work should be focused in those areas that still need attention.

1. Is the agency/partnership willing to conduct evidence-based health programs and stay true to the model(s) being implemented? Specifically, can the potential partner:

   - Distinguish between evidence-based health programs and other programs?

- Build from existing health programming experience?
- Gain and keep the support of healthcare organizations?
- Preserve fidelity to key interventions and provide quality control while making necessary modifications?

2. Is there funding for the program in the form of either new money and/or a willingness to reallocate current resources to support evidence-based health programming? Can the potential partner:

   - Secure sustainable funding for evidence-based health promotion and self-management programs?
   - Engage a variety of funders in the importance of evidence-based health programs?
   - Reallocate current funds to support new evidence-based health programs?
   - Meet the demands of continuously increasing numbers of program participants?

3. Is there access to personnel with the expertise to do these programs and to the population that needs these programs? Can the potential partners:

   - Recruit and retain staff or contractors who have knowledge of specific health promotion and self-management topic(s) and/or behavior change methods?
   - Recruit and retain peer leaders, peer supporters, and other volunteers?
   - Draw upon appropriate experts to offer introductory and follow-up training and guidance?
   - Attract the target population and continue to recruit on an ongoing basis?
   - Offer programming at times and places that are convenient for the target population?

4. Is buy-in from senior leadership and key partners reflected in both programmatic and financial support? Can the potential partners:

   - Ensure that programs receive the necessary time and attention by knowledgeable staff and agency leaders?
   - Gain commitment from their board(s) for evidence-based health programming?
   - Commit existing funds or identify new funds to build and sustain the program?

**Resources Needed to Implement Healthy Changes™**

The resource requirements for implementing the Healthy Changes™ program fall into three categories:

- **Start-up resources** for integrating the program into an agency's ongoing service delivery, including training staff and peer leaders.

- **Ongoing resources** for staff involved in supervising the trained peer leaders.

- **Reproduction of or acquisition of educational materials** for participants and group leaders.

***Start-up resources***
Starting this program requires the time of agency directors and supervisors. Required start-up resources include contributed or purchased expertise from an experienced trainer to train peer leaders and to provide oversight and supervision. In addition to training, an agency supervisor or administrator may need to be consulted about the most effective way to integrate the program into ongoing agency operations.

***Ongoing supervisory resources***
The program requires sufficient ongoing resources to enable a supervisor to visit at least one Healthy Changes™ session a month to ensure that the trained peer leader has the skills, knowledge, and resources to adequately facilitate the program. During that session, the supervisor should be able to ascertain the degree to which the trained peer leader presents the program as designed. The supervisor also assists in identifying guest speakers and locating appropriate community resources.

***Reproduction or acquisition of educational materials***
The agency will need to decide on the type and quantity of print or video materials that will be available to participants. Printed materials available for public use exist, as do videos that agencies can copy. The local chapter of the American Diabetes Association is a good resource for printed educational materials. Not only will it have a wide variety of resources, but the staff can also make sure they are current and appropriate for the target audience. Agencies may choose to customize these materials depending on language, culture, or community preferences, but this would require additional resources.

In addition, the Program and Leader Guide (see Section VIII) must be reproduced so all trained peer leaders have their own manuals. The manual is currently available in English, Spanish, and Russian. Making the manual available in other languages would entail additional expense.

**Partners Help Meet Resource Needs**
Community agencies implementing the Healthy Changes™ program may find it useful to partner with organizations, institutions, or individual professionals to assist with one or more of the following activities:

- Training peer leaders and other agency staff on diabetes self-management issues and group facilitation skills.
- Assessing the competence of individual trained peer leaders to conduct the program as designed.
- Coaching peer leaders, an activity that may involve assistance with skill development through direct observation of their interactions with group members.

- Acting as an expert resource, including willingness to be a guest speaker at selected Healthy Changes™ sessions.
- Providing appropriate information on nutrition, physical activity, and diabetes community resources.
- Implementing the program in a culturally relevant way to address the values, beliefs, language, and culture of specific population groups.

## III. ADOPTION: RECRUITING IMPLEMENTATION SITES AND STAFF/VOLUNTEERS

### Recruiting Sites

Sites can be recruited through a variety of methods. It is most effective to use networks already in place, such as the local Area Agency on Aging, public health department, or a congregate meal site. Suitable settings for the Healthy Changes™ program include community organizations with experience in delivering programs and services to older adults, especially health-related programs. Possible sites can include senior centers, churches, or retirement communities. The program is not designed for institutional settings such as hospitals, nursing homes, or psychiatric facilities in which individuals have limited opportunities to make dietary or physical activity modifications.

Identifying and understanding the mission of an agency can provide valuable information regarding its suitability for the program. Ideally, presentations should be made directly with agency staff to describe the Healthy Changes™ program, as well as its benefits and requirements. While expectations of fidelity to the program apply to all sites, the program can be tailored to meet the individual circumstances of each site to ensure successful adoption. For example, sites may vary in the number of available and suitable volunteers for trained peer leadership positions. Because the use of trained peer leaders is a significant component of the Healthy Changes™ program, assisting staff in identifying and supervising leaders is instrumental to a site's willingness and ability to participate.

Once individual sites are identified, it is important to assess the readiness of each for effectively implementing the Healthy Changes™ program. The questions contained in Section II under "Recruiting Successful Partnerships" can help in this process. To be successful, agencies must have available personnel and knowledge about recruiting and supervising volunteers. They also need to be able to recruit and enroll participants into the program, have space or the use of space for program sessions, have resources available to copy program materials, and have access to expert resources as needed.

### Managing the Sites

Healthy Changes™ can be implemented by an individual agency at one or more locations or adopted by a lead agency or coordinating body that works with multiple agencies. For an individual agency, the program works most effectively with ongoing supervision and resources from an agency staff person who serves as the site coordinator.

In the lead agency model, an agency or a coordinating body, such as a coalition of senior centers, an area agency on aging, or a council of churches, provides a project coordinator who assists each site in starting the program and provides ongoing monitoring. This model requires that each location also have a site coordinator who can ensure the weekly meetings are conducted as recommended. Benefits to this model include the ability to gather site coordinators and peer leaders periodically for additional training, motivation, and support. In addition, the lead agency coordinator may have knowledge of, and access to resources and information from a broader network of agencies and organizations throughout the community.

The lead agency model provides many benefits to local sites. For example, it may be able to provide expertise or bring together experts within the community to ensure that leaders, resource materials, and the Healthy Changes™ program meet the literacy, language, or cultural needs of the client population or agency. The lead agency can also help select and recruit potential peer leaders. This may include providing a coordinated training session for all new peer leaders, mentoring new trained peer leaders, and providing an opportunity for trained peer leaders to meet for additional training and support.

Once the sites are selected, the lead agency can facilitate bi-monthly leadership meetings to provide ongoing assistance in maintaining fidelity to the program and solving problems. These meetings also provide the opportunity for team building, cohesion, and collaboration between site leaders.

The lead agency can also help produce marketing materials more economically than a single agency, and assist with other marketing strategies such as newspaper articles and representing the program in the community. In addition, the lead agency can help identify and create a list of potential community resources for participants.

A copy of a contract, "Agreement for Services," is available in Section VIII. It outlines specific responsibilities for the lead agency and sites in order to maintain fidelity to the Healthy Changes™ program.

**Recruiting Peer Leaders for Healthy Changes™**

Any organization planning to implement the program should quickly identify candidates to become trained peer leaders. Existing health-related programs offer a good source for recruiting potential trained peer leaders, as do volunteers for other programs.

The successfully trained peer leader acts as part of the group. Thus, they should resemble the demographics of the groups they lead. Professionals such as doctors, nurses, and diabetes educators have a great deal of knowledge about diabetes, but they tend to assume the role of expert instead of group member. Professionals are a great resource to use in other ways—as guest speakers, for example.

The following attributes significantly contribute to the success of Healthy Changes™ trained peer leaders:

- Previous experience leading or facilitating groups
- Ability to relate to other group participants
- Ability to give participants a sense of ownership of the group
- Good listening skills
- Good problem-solving skills
- Experience living with diabetes, either personally or by living with or caring for someone with the disease. If the leader has diabetes, it is important that s/he model regular utilization of medical care (for example, at least one medical visit a year related to diabetes). Also, the leader doesn't have to be in perfect "control," but s/he

should know her/his desired hemoglobin A1c number and be willing to work on achieving it.

- Knowledge of the correct answers to the Diabetes Self Knowledge Test and the ability to lead a discussion about them
- Ability to refrain from advocating personal beliefs, opinions, and medical advice about diabetes care and treatment
- Willingness to facilitate the program as designed and presented in the manual
- Ability to enjoy and have success in working with older adults

The Peer Leader Job Description and Peer Leader Screening Form used in evaluating potential leaders are available in Section VIII, along with a promotional card for recruiting volunteers and the Diabetes Self-Knowledge test and answers.

## IV. REACH – OUTREACH – RECRUITING PARTICIPANTS

### Who Benefits from Healthy Changes™?

Healthy Changes™ targets people older than 55 who have diabetes. Disease status, diabetes type, insulin dependence status, and recent or long-term diagnosis do not restrict program participation. Participants should be living in the community but not in an institutional setting such as a nursing home. Individuals need to be able to participate actively in the group; so conditions such as serious memory loss or behavioral problems may prevent inclusion in the Healthy Changes*™* program.

Participants don't have to have already committed to making healthful changes in their diabetes self-care when they join the program. They need only have a willingness to participate in the classes. They don't have to have attended a formal diabetes education program prior to joining, and attending Healthy Changes*™* is not a substitute for a formal diabetes education program. Participants with little knowledge about management issues such as taking insulin and other medications or managing complications are encouraged to follow up with the appropriate healthcare provider.

### Recruitment for Healthy Changes™

Effective recruitment begins with understanding the needs and interests of the community. Ideally, a network of leaders and agencies can shape outreach activities through:

- Interviews with key individuals in organizations
- Focus groups of potential participants
- The establishment of an advisory committee representing diverse populations

In addition, it is helpful to have an understanding of the cultural beliefs and practices of the target audience, as well as the communication styles of diverse populations. For example, the Healthy Changes™ program focuses on helping participants make changes in their diet. It is important to know if group members have specific dietary customs that may pose obstacles to setting nutritional goals. Addressing such potential concerns early makes it more likely that sites will be able to successfully market their programs to targeted communities. For example, in a Native-American clinic setting it was important to understand that community gatherings in which food is shared are important social events. Assisting participants in planning for healthy participation in such activities is essential to the success of the program.

Also important in building trust and increasing participation levels is a grass roots involvement with diverse populations, such as attending tribal meetings or participating in cultural events outside of the Healthy Changes™ meetings.

The educational/literacy level and language of the target population should also be taken into consideration in recruitment strategies. Enlisting the help of known and trusted members of the group to offer information and invite community member participation is often critical to successful recruitment. In addition, marketing materials that are simple, easy to understand, and visually appealing are most effective with a

broad range of audiences. Translating the materials into other languages should also be considered, along with using bilingual leaders who are known and respected in their communities.

We used the promotional card noted in Section III to recruit participants and posted program information on the Web sites of our healthcare partner and lead agency. We also distributed a flier with the Healthy Changes™ group meeting sites throughout the community (a sample is provided in Section VIII). In addition, the lead agency (Elders in Action) conducted a recruitment drive to encourage sites to enroll new members, resulting in 20 new participants during a three-month period. The Recruitment Drive for New Participants information can also be found in Section VIII.

**Barriers to Participation**

We encountered a number of barriers to Healthy Changes*™* participation. Recruiting men was a challenge in some sites, which is consistent with most diabetes education programs, which tend to attract mostly female participants. Transportation difficulties were reported at other sites. Finding appropriate times and locations for the meetings were also cited, but less frequently.

Some participants expressed disbelief about the seriousness of their diabetes or thought they knew all there was to know about the disease. Others did not want to set goals regarding their diabetes self-care behavior, preferring to communicate in a support-group style with other members. Ideally, the coordinator can identify impediments to program success and discuss them at bi-monthly support meetings, where trained peer leaders can offer suggestions for overcoming obstacles and share success stories.

## V. IMPLEMENTATION

### Core Components of Healthy Changes™

The purpose of Healthy Changes™ is to provide people with ongoing diabetes support and education about nutrition and physical activity. The groups meet once a week, and new members can join at any time as long as there is room. Groups should be between 12 to 15 people. Too few members may diminish group cohesion while too many members may disrupt the effectiveness of the learning experience. The program allows participants to join, drop out, or rejoin as their needs dictate. The organization of each class allows all group members to participate fully even if they have not attended previous classes.

Each meeting lasts about 90 minutes and follows a specific agenda. At the start of the meeting, members report on their Roadmaps (weekly goals), and the group helps problem-solve obstacles to weekly goal attainment. Then the leader, guest speaker, or a member presents the week's topic and leads a discussion. Finally, members develop their Roadmap for the next week and gather any assigned homework.

The core components each week include:

- **Education.** Each session includes a brief educational presentation on a variety of topics related to nutrition and physical activity information, e.g., making healthful food choices, meal planning methods, and aspects of an exercise program.

  Guidelines for Resource Speakers (available in Section VIII), can assist sites in selecting appropriate sources for educational presentations. Two other tools, Communicating with Your Healthcare Professional, a role-playing exercise intended to assist members in identifying and learning effective behaviors, and Tips for Communicating with Your Healthcare Provider, can also be found in Section VIII.

- **Self-management support.** Healthy Changes™ incorporates all aspects of successful disease self-management into each session. Each week, participants develop a written plan to achieve their goals. This "Roadmap for Change" helps them identify:

  - The health goal they want to achieve
  - The actions they will take during the week to achieve that goal
  - Any barriers that may prevent them from completing the weekly actions
  - Resources they need to overcome these barriers
  - Their assessment of whether they can achieve their goal

  Participants share their Roadmaps with the group when they develop them and after they work on meeting their goals, typically the following week. Group members provide feedback and support about newly developed plans, make suggestions, and help each other identify solutions for anticipated barriers. When a participant reports back after working on the weekly goals, the group offers congratulations for

successes as well as encouragement, and brainstorms possible solutions if the participant was unable to achieve the goal.

- **Connection with resources.** Finally, Healthy Changes™ addresses the barrier of inadequate resources by linking participants with community resources, including exercise programs and nutritional classes. Participants often identify resources during the group discussion. The trained peer leader may also offer resources through personal knowledge or by connecting with other community members invited as guest speakers. Conducting the program in community organizations provides a special advantage because these agencies can provide their own resources and often have knowledge about services provided by other community groups.

  Complete guidelines for the weekly classes are available in the Program and Leader Guide included in Section VIII, as well as several tools to assist with weekly agenda setting. These include: Ground Rules, Brainstorming Rules, Problem Solving Guidelines, Goal Setting Worksheet with Examples, and Roadmap for Change Worksheet with Examples. As the program evolved, the Healthy Changes™ S.M.A.R.T. Goals worksheet, available in Section VIII, was developed to assist the trained peer leaders in helping participants meet their goals.

**Why Healthy Changes™ Delivers a Health Impact**
Diabetes education has long been recognized as an important part of diabetes care. Formal diabetes educational programs that meet specific criteria and require a physician's order are reimbursed by Medicare, as well as many other health insurance plans.[6] Characteristics of these programs include a time limit, prescribed content, professional educators, and reimbursement limits. Healthy Changes™ does not replace formal diabetes education but provides an important addition to the educational process, with a focus on helping participants learn self-management behaviors.

According to Marrongiello and Gottlieb[7], there are three types of barriers to self-care among older persons:

- **Informational-knowledge based barriers.** "They must have the knowledge about when and how to engage in a self-care behavior."

  A review of numerous studies and meta-analyses of effective interventions for diabetes self-management showed that interventions focused on diet or physical activity positively affected outcomes such as reduced fat and calorie intake, improved glycemic control, and increased exercise.[8] As mentioned in Section I, Healthy Changes™ focuses on providing information and support for incorporating nutrition and physical activity into participants' daily life so members can learn when and how to self-manage their own diet and exercise.

- **Motivational-attitudinal based barriers.** "They need to believe in their capacity for self-care and the potential efficacy of engaging in the self-care activity, and they need to want to engage in the self-care activity."

The research suggests that becoming a self manager depends less on learning facts about a particular condition and more on learning how to set reasonable goals, problem solving, and having a source of peer support.[9] Kate Lorig at Stanford University has documented the importance of these characteristics, which provide the backbone of Stanford's Chronic Disease Self-Management Program. Activities designed according to these characteristics improve one's self-efficacy and confidence in one's ability to master a new skill or affect one's own health. Therefore, the Healthy Changes™ program uses a group setting to take advantage of peer support to help people problem solve and establish realistic goals.

- **Resource-based barriers.** "They need the personal skills and community resources required to engage in self-care activities."

  Healthy Changes™ addresses a final self-care barrier – the lack of adequate resources – by helping people establish links with assets within the community. Unfortunately, little information exists to support this intervention. Indeed, the literature notes that other studies have sorely lacked this component.[10] Thus, establishing personal connections with community resources plays a key role in the Healthy Changes™ program.

**Maintaining Fidelity to Healthy Changes™**

The concept of treatment fidelity refers broadly to the extent to which a specific treatment has been implemented as intended. In scientific studies, fidelity to the treatment program is necessary to reliably and validly test a clinical intervention. Thus, a number of methodological strategies have been developed to ensure treatment fidelity in research protocols.

The Healthy Changes™ program is designed to be interactive, self-regulating, and focused on problem-solving to empower individuals to invent solutions for their own behavioral problems. These elements need to be retained in any replication.

In Healthy Changes™, fidelity is fairly strict in the areas of study design and key program elements (e.g., group vs. one-on-one sessions, number of sessions, program length). To aid in fidelity of program delivery, the Program and Leader Guide was created for interventionists or trained peer leaders. Peer leaders receive a two-day training, attend bi-monthly meetings, are directly observed leading their groups to note their use of various components of the program, and complete a survey about their experience in administering key program components. The survey asks for suggestions for improving the program and for their perceptions of how study participants acquired goal-setting and other skills.

From direct observations, it became clear that some peer leaders had difficulty teaching or did not use the approved program action plan. In meetings with the lead agency coordinator, trained leaders received feedback and recognition to help them maintain and improve their skills and enhance their treatment fidelity. Despite these efforts, given the variety of sites, participants, and trained peer leaders participating in the Healthy Changes™ program, treatment fidelity was imperfect and difficult to measure.

## Is Healthy Changes™ the Right Program for You?

The Healthy Changes™ program can fit in a variety of agencies, depending on their commitment to evidence-based programming for older adults. Typically, an agency interested in healthy aging and livability issues with experience working with volunteers in leadership roles can successfully implement the program. The agency's ability to work effectively with volunteers and provide ongoing staff coordination is also essential.

## Training Leaders for Healthy Changes™

Healthy Changes*™* requires a two-day training program for volunteer peer leaders. The peer leader training is designed for groups of eight to 12. This allows the potential peer leaders to practice their new skills in a group setting that simulates the Healthy Changes*™* program. A training session can include several peer leaders as well as staff involved in coordinating the program, increasing the cost effectiveness of the training.

The design of the two-day leader training provides potential peer leaders with the knowledge and skills necessary to facilitate weekly sessions. The training includes information about facilitating groups, dealing with challenging participants, diabetes self-management, behavior modification, and self-care practices. In addition, the training includes practice sessions so participants can put their new information into action. Section VIII contains the Healthy Changes™ Peer Leader Training 2-Day Agenda.

After completing the training, trained peer leaders should be able to:

- Describe the Healthy Changes™ program
- Understand basic information about diabetes
- Understand and demonstrate the skills necessary to facilitate a group discussion
- Demonstrate skills in leading brainstorming or problem-solving discussions
- Understand and demonstrate the role of the trained peer leader
- Understand the purpose of goal setting and demonstrate how to complete a Roadmap for Change

The choice of trainers to coach the trained peer leaders is extremely important to the successful implementation of the program. Ideally, the lead agency will create partnerships with individuals or organizations that can donate their training expertise. Appropriate trainers include Certified Health Education Specialists, Certified Diabetes Educators, and other individuals who have experience training adults.

The program requires that a supervisor observe at least one Healthy Changes*™* session per month to ensure that the trained peer leader maintains fidelity to the program and has the resources to effectively facilitate it.

Trainers can also serve as "coaches" to trained peer leaders and agency personnel throughout the program. This coaching process helps the trained peer leaders to continue to develop and enhance their skills in leading the weekly group sessions.

## VI. MAINTENANCE

To maintain the program, an organization/partnership must continue recruiting new sites and participants. Again, it is useful to use networks already in place. For example, involving the local Area Agency on Aging (AAA) provides an entry point for key senior service providers throughout an area. Once the Healthy Changes™ program is established in one senior center, it can serve as a model and resource for other centers in the system. Contractors with the local AAA can provide another source of new sites. For example, congregate senior meal providers that serve a population with a high incidence of diabetes are a natural source for recruiting new participants.

Additional maintenance issues include:

### Staying Connected

Membership in local coalitions can help disseminate information about Healthy Changes™, as well as develop new partners among community agencies such as public health departments or private healthcare providers. Presenting at meetings sponsored by the local Area Agency on Aging and other coalitions is particularly effective in ongoing recruitment efforts. A list of suggested Recruitment Strategies is included in Section VIII.

It is important to maintain relationships among partners to provide for ongoing coordination of program details, problem-solving, and resource sharing. Quarterly meetings provide opportunities for communication as well as a forum for developing strategies to recruit new partners. Contacts with members within other healthcare systems and on the state level can be a source of new partners.

Forming an advisory committee that meets periodically to advise the partners provides the chance for outside input into the planning process. It also allows for recruiting participants from a variety of constituent groups, as well as dissemination of information about the program into the broader community. Groups represented on this committee might include the American Diabetes Association, the state Department on Aging, the Area Agency on Aging, registered diabetes educators, leaders from the local Healthy Changes™ groups, local diabetes coalitions, and community multi-ethnic groups. Samples of meeting agendas for Partner and Advisory Committees are included in Section VIII.

### Sustaining the Commitment to Training New Staff

The costs for materials to provide the Healthy Changes™ program are minimal, which is important for sustaining a program at the community level, but participating agencies must commit to training staff and peer leaders, provide ongoing coordination of the program, and support the trained peer leaders. This commitment is particularly important if staff changes occur at the site or when new trained peer leaders are needed.

Given the ongoing nature of the Healthy Changes™ program, sites need to continuously recruit and attract new participants. Partners can play an important role in

this continued recruitment. Healthcare partners can refer patients; diabetes educators can refer clients for continuing support; and community organizations can add Healthy Changes™ to their list of community resources.

**Keeping Staff Involved**

The agency hosting Healthy Changes™ should make all staff aware of the program and set an expectation that all staff do outreach and recruitment. Group participants may provide one of the strongest avenues for recruitment by bringing their friends to the meetings. Participants can also be guest speakers at local health fairs or other events. This keeps the participants involved in the program and may have positive health benefits. This person-to-person strategy could have an even greater potential if organized and supported by the sponsoring agency.

**Media and Community Outreach**

The local media can also help promote the program by printing success stories. There is no one strategy that works exclusively in recruiting new participants; therefore, it is important to try as many strategies as possible.

Other key methods of maintaining a program after an initial collaboration or a start-up phase of the program ends is to incorporate community supports from the beginning; conduct follow-up assessments and focus groups to characterize success; incorporate incentives and policy supports; and debrief intervention agents and organizational decision makers to identify what they liked best and least about the program and determine those aspects they would like to continue or modify. It is also important to collect information on whether the setting or organization continues the program after the formal study ends.

## VII. EFFECTIVENESS, PERFORMANCE MEASURES, AND OTHER OUTCOMES

### The Importance of Performance and Outcome Measures

Information about the comparative effectiveness of alternative programs, the short- and long-term effectiveness of programs, their cost, adverse effects, appropriateness for diverse samples, and characteristics of users and providers that predict program success are all important information to have when deciding whether to adopt a particular program. In order to provide this information and determine if favorable changes occurred through Health Changes™, it is necessary to collect both performance and outcome measures.

### Healthy Changes™ Performance Measures

The aim of the Healthy Changes™ implementation in Oregon was to conduct an intervention program similar to the *Hartford Healthy Changes* pilot study with a sample of older adults with Type 2 diabetes. We aimed to document our ability to recruit a diverse sample of the study participants as well as document:

1. Adherence to the Healthy Changes™ program
2. Improvements in behavioral risk factors associated with diabetes and coronary heart disease (including dietary fat intake, minutes of physical activity, and body weight)
3. Improvements in perceived quality of life
4. Increased self-efficacy
5. Perceived social/environmental resources and support (including an increased sense of empowerment in communicating with healthcare providers)
6. Participant satisfaction with the program

The Healthy Changes™ evaluation also included a set of performance measures predictive of participation, level of involvement, and treatment outcomes. Each measure is described here in detail. The measures selected for this program evaluation focused on areas in which we expected to see improvement or changes that were brief, reliable, valid and sensitive to change, and that correlated with "gold standard" measures of behavioral outcomes such as dietary intake or physical activity. We also looked for measures that were less reactive and equally or more sensitive to intervention as these alternative measures, and that presented less participant burden than other longer and more comprehensive instruments that have been used in field settings.

Recommended performance measures were designed to document responsiveness to the intervention and included completion of homework assignments, physical activity and dietary intake logs, attendance logs, reasons for attrition, participant evaluation forms, and verbal feedback about the participants from trained peer leaders and site coordinators during monthly meetings. The peer leader performance was also evaluated using direct session observation forms and a questionnaire documenting the leader's experience with the program.

**Healthy Changes™ Outcomes Measures**
The following individual level effectiveness or outcome measures were included:

- **Participant demographic variables**, including age, gender, race/ethnicity, education level, income, employment status, smoking status, and living situation (e.g., living alone or with others). Diabetes-specific information was also collected on medical conditions (self-reported height and weight, age at diabetes diagnosis, years since diabetes diagnosis), insurance status, and co-morbidities.

- **Behavioral endpoints,** including a general measure of eating patterns and physical activities. The diet and exercise items from the Summary of Diabetes Self-Care Activities (SDSCA)) consists of nine questions in which levels of self-care over the preceding week are assessed for diet and physical activity.[11] Additional items from Kate Lorig's Stanford Patient Education Exercise Behavior questionnaire were added to the SDSCA. Quality of life was measured with the National Health Interview Survey Self-Rated Health single item asking respondents to rate their perceived general health on a scale ranging from poor to excellent.

- **Self-reported measures** of body weight, height, and Body Mass Index.

- **Psychosocial outcomes, including self efficacy**. Self efficacy was measured using Kate Lorig's Stanford Patient Education Research Center Self Efficacy for Diabetes measure. This eight-item diabetes-specific instrument assesses participant confidence in overcoming such factors as time, social pressures, competing demands, and thoughts associated with following a dietary and physical activity regimen.

- **Use of community resources/patient empowerment**. Use of community resources was assessed using the Chronic Illness Resources Survey.[12] The CIRS provides a profile of an individual's diabetes self-management support across several different sources, ranging from more proximal or closer-in factors (e.g., family and friends) to more distal or remote factors (e.g., healthcare team, neighborhood). Support for engaging in self-management tasks, including health-promoting behaviors such as lowering dietary fat intake, stress management, and engaging in physical activity, were assessed for each resource area.

In addition to the above, a Participant Information Enrollment Survey provided important information on the reach and appeal of the program. Participants were asked to evaluate Healthy Changes™ program components such as handouts and other written materials, weekly meetings, achievement of program goals, program content, and the level of expertise and clarity of the trained peer leaders.

Follow-up measures were collected at four, eight, and 12 months. The questionnaire data was checked for out-of-range values and descriptive statistics computed to provide an understanding of the nature of the data collected. This was done using univariate statistics and graphical presentations of the primary variables. One-way analyses of variance for continuous variables and chi-square analyses for categorical variables

were used to evaluate the equivalence of completers and dropouts on demographic and medical history variables. The following analyses were then conducted:

- Translatability, defined as the representativeness of participants compared to individuals with Type 2 diabetes in the state (OR) based on demographic characteristics collected at baseline.

- Program effectiveness, defined as pre- and post-program change in the Summary of Diabetes Self-Care Activities Questionnaire. Paired t-tests were used to determine the effect of the intervention on diet and physical activity. Intraclass correlations were computed to determine whether there was significant clustering within the different sites.

One organizational level measure involved recording the individual experiences of site coordinators. Items covered included perceived agency benefits of the program, amount of involvement with trained peer leaders, obstacles to launching the program at their site, criteria for choosing peer leaders, participant recruitment strategies, barriers to participating in the study, use of financial resources, and continuation of the program.

The following performance and outcome measure tools are included in Section VIII:

- Participant Information Enrollment Survey. The four-, eight-, and 12-month surveys are identical to the Participant Information Enrollment Survey with the addition of the participant/consumer satisfaction survey described above.

- Attendance log

- Trained Peer Leader Observation Form. Trained peer leaders are observed by the project coordinator on a bimonthly basis during the study.

- Site Coordinator Questionnaire. This is an assessment of the Site Coordinator's experience with the Healthy Changes™ program.

- Trained Peer Leader Questionnaire. This is an assessment of the trained peer leader's experience leading Healthy Changes™ groups.

- Trained Peer Leader Focus Group Questionnaire Guide. The trained peer leader focus groups are conducted when the peer leaders complete their last session. The focus groups are a concrete method of enhancing the lessons learned from the trained peer leaders.

- Participants' Focus Group Questionnaire Guide. Focus groups are conducted with the study participants upon completion of the Healthy Changes™ program.

## VIII. TOOLS AND RESOURCES

**Adoption:**

1. Diabetes Self Knowledge Test
2. Diabetes Self Knowledge Test Answers
3. Agreement for Services
4. Peer Leader Job Description
5. Peer Leader Screening Form
6. Promotional Card

**Reach:**

1. Group Meeting Sites
2. Recruitment Drive for New Participants

**Implementation:**

1. Program and Leader Guide
2. Ground Rules
3. Brainstorming Rules
4. Problem Solving Guidelines
5. Goal Setting Worksheet
6. Goal Setting Worksheet Example
7. Roadmap for Change
8. Roadmap for Change Example
9. S.M.A.R.T. Goals
10. Guidelines for Resource Speakers
11. Communicating with Your Healthcare Provider
12. Tips for Communicating with Your Healthcare Provider
13. Peer Leader Training 2-Day Agenda

**Maintenance:**

1. Recruitment Strategies
2. Advisory Committee Sample Agenda
3. Partners Meeting Sample Agenda

**Effectiveness:**

1. Participant Information Enrollment Survey
2. Participant Information 4-month Follow-up Survey
3. Participant Information 8-month Follow-up Survey
4. Participant Information 12-month Final Survey
5. Attendance Log
6. Trained peer Leader Observation Form
7. Site Coordinator Questionnaire
8. Trained peer Leader Questionnaire
9. Trained peer Leaders' Focus Group Questionnaire Guide
10. Participants' Focus Group Questionnaire Guide

## End Notes

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