

Hawaii Promotes Healthy Aging of Multi-Ethnic Population by Adapting Evidence Based Programs

The Healthy Aging Partnership is a coalition established by the Hawaii Department of Health, Executive Office on Aging, Area Agencies on Aging and the University of Hawaii to improve the quality of life associated with chronic disease of Hawaii's older adults. The statewide coalition has improved chronic disease-related health disparities by adapting evidence-based programs, such as Chronic Disease Self-Management Programs and EnhanceFitness, to Hawaii's multi-ethnic older adult population.

Background

The population of U.S. adults over 65 years old is expected to rapidly increase to 21.7 percent by 2040. The leading causes of disability and death for adults 65 years and older are chronic conditions including stroke, diabetes, Alzheimer's disease, and cancer. The National Council on Aging reports that approximately 92 percent of older adults have at least one chronic condition and 77 percent are living with more than one chronic condition.¹ Chronic disease impacts older adults' ability to carry out daily activities such as personal hygiene, getting dressed, preparing meals, and feeding themselves. Additionally, it is estimated that 95 percent of healthcare costs for adults over 65 years old are a result of living with at least one chronic condition.² Research indicates that evidence-based health promotion programs can improve the quality of life of older adults and reduce healthcare costs by increasing physical activity and decreasing negative symptoms associated with chronic disease.³

Key Recommendations for Adapting EBP:

- Engage community and evaluation stakeholders in the adaptation of EBP to local conditions
- Develop a partnership with stakeholders at all levels of adaptation and implementation
- Develop a comprehensive training program including EBP, evaluation and fidelity monitoring.

Evidence-based programs (EBP) are peer-reviewed, federally-endorsed interventions that are proven to improve the physical activity, nutrition, chronic disease management, and mental wellness of older adults.⁴ EBP, such as the Chronic Disease Self-Management Program (CDSMP) and EnhanceFitness, can be implemented to improve the healthy aging of older adult. CDSMP is a six-week, evidence-based intervention developed by Stanford University, during which participants are guided to manage chronic conditions through motivational interviewing and the development of action plans to better manage their conditions and improve their health.⁵ EnhanceFitness is a group exercise program developed by the University of Washington and Sound Generations (formally Senior Services) in Seattle proven to increase the strength, flexibility, and balance of older adults.⁶ Successful implementation of these evidence-based programs is associated with decreased healthcare costs and improved quality of life for participants.

Racial and ethnic minorities are projected to account for approximately 42 percent of U.S. adults by 2050.

It is important to ensure that evidence-based programs reach all U.S. populations to promote health equity across our older adult population. In 2013, adults 65 years or older represented 14.1 percent of the U.S population and 21.2 percent of these individuals were of racial and ethnic minority populations.⁷ The rapidly aging population and changing U.S. demographics indicate a need for policies and programs aimed at ethnically and racially diverse older adult populations.

In an effort to elevate this growing population and their needs, ASTHO’s **2015 Healthy Aging President’s Challenge** aimed to improve the ability of older adults to live well within their communities by encouraging innovative partnerships between state and local agencies, community-based stakeholders, and healthy aging experts to implement evidence-based strategies.⁸ The challenge utilized the **National Prevention Strategy framework**, which suggests increasing the number of Americans that are healthy at every stage of life can be achieved by creating healthy and safe community environments, providing clinical and community preventive services, empowering people, and eliminating health disparities.⁹ Thirty-six states and two territories pledged to support the challenge by promoting evidence-based strategies to improve the health of older adults. Hawaii was one of the states that pledged to support ASTHO’s Healthy Aging President’s Challenge by strengthening existing partnerships between the Executive Office on Aging (EOA), AARP, and community stakeholders to empower Hawaii’s older population to age well through EBPs.

Hawaii successfully implemented programs that decrease the health disparities of a rapidly aging multi-ethnic elderly population. The U.S. Census projects that by 2020 adults over the age of 60 will make up 25.8 percent of Hawaii’s population. Over 70 percent of Hawaii’s elderly population consists of racial and ethnic minorities, primarily Asian, Native Hawaiian, and Pacific Islander minorities. In addition, 18 percent of Hawaii’s older adults spoke English less than “very well,” which is considerably higher than the U.S. average of nine percent.¹⁰ These demographics indicate the importance of adapting EBP to Hawaii’s multi-ethnic elderly population.

Hawaii Healthy Aging Partnership

In 2003, Hawaii’s Department of Health (DOH) and EOA received a small grant to obtain training on EBPs and pilot evidence-based interventions that address health disparities within Hawaii’s older adult population. Hawaii’s DOH and the EOA, an agency within DOH, collaborated with Area Agency on Aging and the University of Hawaii to create the Hawaii Healthy Aging Partnerships (HAP).

HAP developed a strategic plan and adapted CDSMP and EnhanceFitness to Hawaii’s multi-ethnic elderly population in order to decrease health disparities, increase physical activity, and improve the quality of life associated with chronic disease.¹¹ Between 2003 and 2005, the EOA and DOH provided training on needs assessment, evidence-based programming, and evaluation for Area Agency on Aging staff. Providing training to leaders within county agencies was essential to developing champions at the community level prior to implementation.

Key Partners:

- Executive Office on Aging
- Area Agency on Aging
- University of Hawaii
- Hawaii Primary Care Association
- National Kidney Foundation
- Implementation sites:
Nutritional centers, senior centers, Federally Qualified Centers, Physician’s Offices

Since 2003, Hawaii provided EBPs at 139 implementation sites for an estimated 3,727 participants.

Currently HAP is a coalition of over 30 public health agencies and community stake holders whose primary role is to provide EBPs to Hawaii’s multi-ethnic elderly population. Pacific Islanders and Native Hawaiian minorities, who have higher rates of chronic conditions, are the target population for EBPs provided through HAP.

Steps for Adaptation of Evidence-Based Programs

To achieve improved population health outcomes, it is critical that the integrity of EBP components are maintained while translating interventions to local communities. In 2005, HAP was awarded a three-year federal Administration on Aging grant to translate and implement CDSMP and EnhanceFitness. EnhanceFitness and CDSMP were deconstructed into program components (such as marketing, recruitment, staffing, training, scheduling, evaluation, room setting, and music) using the [Track Change Tool](#)¹² adapted by the National Council on Aging. This tool was used to compare how HAP intended to adapt program components and how components were implemented in the original intervention.

The deconstructed program components were then examined using the [adaptation traffic light](#) method to determine which components could be modified to fit the target population, while still maintaining the positive participant outcomes associated with the original program.¹³ Green light changes, such as adapting marketing tools to reflect the local culture, were determined to be beneficial in gaining support from local communities without impacting program outcomes. Evidence-based program components that were determined to significantly impact the effectiveness of the intervention were maintained (red-light changes) or adapted only after discussing planned changes with the original program developers (yellow-light changes).

Green Light Changes: These changes were determined to not have an impact on the fidelity of the EBP while increasing participant engagement by making the program relatable to the local communities.

- **CDSMP adaptations:** Changing the program name to Ke Ola Pono, which translates to “health in balance” in Hawaiian, using marketing tools that featured local older adults increased participation and completion rates without compromising program effectiveness. Other modifications included opening sessions with a prayer, serving nutritious local food, and providing participants with a completion certificate.¹⁴
- **Enhance Fitness adaptations:** Diversifying locations where recruitment occurred and using Hawaiian music with the same tempo as the original program music, and marketing changes were some of the key modifications for adaptation.¹⁵

Red Light Changes: Core program components are elements that must be implemented unaltered from the original program intervention to ensure program effectiveness (red-light changes). Red-light changes remained unchanged and included program content, how the instructor delivered the program, and the sequence and length of sessions.¹⁶

- **CDSMP:** HAP identified several red-light changes such as removing self-management techniques like action planning or modifying program content.
- **EnhanceFitness:** HAP did not change the tempo of music, length of exercise program, and the need for all participants to wear close-toed shoes appropriate for aerobics.¹⁷

Yellow Light Changes: Program adaptations that were classified as yellow-light changes were only implemented after review with the original program developers. These adaptations allowed HAP to plan programs that were accessible to Hawaii populations despite resource limitations and language barriers.

- **CDSMP adaptations:** A challenge encountered by HAP during the CDSMP adaptation was that many participants were not fluent in English and the program was not available in native languages. CDSMP developers at Stanford reviewed and approved adaptations for Ke Ola Pono to engage non-English speakers. Adaptations include adding a session 0, during which terms

used in the program were reviewed, adding local examples, and explaining concepts in native languages before or after each session.¹⁸

- **Enhance Fitness adaptations:** Resource limitations at provider facilities in Hawaii required that some adaptation were made to the setting since wood floors and straight back chairs, as indicated in the original program, were not available in Hawaii venues. The original program developers approved the use of venues with concrete floors and folding chairs, but recommended that instructors monitor the posture and safety of participants frequently.¹⁹

Implementation of Evidence-Based Programs

After the completion of EBP's adaptation plan, HAP assisted community providers with implementation. In 2006, HAP was awarded an Administration on Aging grant to conduct an initial pilot program with Title III providers (e.g. eldercare, nutrition, and caregiving community-based organization) and Title VI providers (e.g. hospitals, nursing homes, and public health agencies that provide resources to persons with limited English proficiency). The coordination and implementation of HAP programs was led by Area Agencies on Aging, which had existing relationships with eldercare providers in their communities. HAP assessed the readiness of county agencies to coordinate the implementation of evidence-based programs and determined CDSMP would be provided in Honolulu and Maui counties and EnhanceFitness would be provided in Kauai and Hawaii counties.

The EOA and DOH were instrumental in the success of EBP implementation in Hawaii by assisting community providers through training, technical assistance, data collection, and fidelity monitoring. Between 2006 and 2009, master trainers collectively held 72 CDSMP workshops and nine EnhanceFitness classes to train other program leaders and instructors.²⁰ The EOA and DOH has offered continuous training in these EBP and evaluation to maintain a cohort of master trainers.

Due to the variations in resource availability, population density, and diversity across the different counties in the state, a hybrid operational model was determined to be the best method for implementation. The Maui Area Agency on Aging (Maui ADRC) initially adopted a centralized mode of operation by maintaining a cohort of trainers and offering to provide EBP to community organizations with target populations. Hawaii and Honolulu Counties implemented EBP using a de-centralized mode of operation by subcontracting the implementation of EBP to community organizations.

During the first four years of implementation, EOA partnered with Stanford and Senior Services to provide training to 51 master trainers in evaluation and EBP fidelity monitoring.

Maui County EBP Implementation

A centralized method of implementation was preferable in Maui due to the variety of languages and ethnic populations. Maui County includes three islands: Maui, Lanai, and Molokai. In 2014, the population of Maui County was comprised of 28.7 percent Asian and 10.7 percent Native Hawaiian and Pacific Islander, but large concentrations of Native Hawaiian and Filipinos live on the two smaller islands—Molokai and Lanai. The coordination of CDSMP and Enhance Fitness programs in Maui is led by a Wellness Coordinator who engages community leaders and schedules CDSMP implementation at their site. Maui ADRC reaches out to community organizations such as churches, businesses, and Federally Qualified Health Centers with target populations, and offers to have trainers provide EBP at their site.

Considering the demographic and geographic characteristics of Maui, it was important to develop a cohort of culturally competent trainers that could travel to community organizations and deliver EBP. EBP master trainers are developed through statewide trainings provided by the DOH and EOA. Master trainers in Maui hold workshops and offer ongoing mentoring to program instructors at the county level. Monitoring the fidelity of adapted EBPs and collecting participant data are stressed across all levels of agency and program delivery. Maui County maintains a strong cohort of master trainers and program instructors through required monthly meetings, ongoing training, and by providing increasing stipends based on extended engagement. Maui ADRC leadership indicated building and maintaining strong relationships with trainers and community leaders is key to successfully implementing and sustaining EBPs.

The EOA and DOH were essential to the implementation of EBP in Maui by offering administrative support, training, technical assistance, and evaluation support. The DOH and EOA provide ongoing administrative support, such as managing licensure and ordering training supplies. The DOH and EOA also work with Stanford and Sound Generations to provide yearly EBP training for master trainers in Hawaii. While monitoring fidelity and collecting participant data were established across all implementation sites, the University of Hawaii leads the data analysis and provides technical assistance around monitoring fidelity. The EOA and DOH also provide ongoing technical assistance. For example, HAP was instrumental in helping the Maui ADRC engage non-English speaking communities by providing technical assistance in the translation of program components. The DOH worked with Stanford to have Maui County be the first to implement a session 0, during which non-English speaking participants could learn about the program in their native language and get assistance filling out forms.²¹

Promising Practice: CDSMP Implementation for Marshallese Population in Maui

Maui ADRC, working collaboratively with Maui Memorial Medical Center, determined that individuals originating from the Marshall Islands had high readmission rates for chronic conditions. Maui County representatives reached out to respected leaders in the Marshallese community to determine interest in offering to host CDSMP programs at a church with high Marshallese attendance. Initially, CDSMP program was translated to Marshallese using an interpreter. Eventually, an interpreter of Pacific Islander dialects was trained as a program instructor and led the implementation of CDSMP at the local church. The Maui ADRC is also actively working to translate CDSMP program material to Marshallese. These translations will then be checked with Stanford.

Hawaii and Honolulu EBP Implementation

The Hawaii and Honolulu Counties implemented EBP using a decentralized mode of operation due to resource limitations. Hawaii and Honolulu Area Agencies on Aging had limited agency-level infrastructure and contracted with eldercare providers in their communities to lead the implementation of HAP programs. The agencies that initially implemented the adapted EBPs in these counties included local non-profit organizations, community health centers, and a community college.²²

The DOH and EOA assisted Hawaii and Honolulu counties, assessing agency readiness to successfully implement the adapted programs using the [Self-Assessing Readiness for Implementing Evidence-Based Health Promotion and Self-Management Programs](#) tool developed by National Council on Aging.²³ HAP considered several variables when assessing agency readiness, including willingness to implement the program, availability of resources, the fit of the program with the mission of the organization and the ability of program instructors to monitor program fidelity.²⁴ Program instructors at each provider agency completed EBP training and were held to the fidelity monitoring standards.

Monitoring EBP Fidelity

The effectiveness with which the adapted EBP were implemented was assessed by monitoring program fidelity and tracking participant outcomes. HAP applied fidelity monitoring strategies to assess how well provider agencies implemented the programs without compromising core program components.

For CDSMP, Master Trainers and experienced leaders were trained to monitor fidelity following a curriculum developed by HAP. For each new leader, HAP used a [10-item assessment developed by Stanford](#)²⁵ (with added detail by HAP) to monitor fidelity of delivery of one or two sessions of each six-session workshop.

For EnhanceFitness, Master Trainers were trained to monitor fidelity of program delivery by Sound Generations. Each fitness instructor leading the program was monitored in their first, fourth, seventh, and twelfth month of teaching and then annually thereafter. Master Trainers used an eight-item assessment fidelity monitoring tool developed by Sound Generations, concerning how well each instructor adhered to curriculum, engaged participants, and kept them safe.²⁶

In both programs, feedback was provided to intervention leaders immediately after the monitoring so that corrections could be made before the next session. Also, feedback was summarized monthly in the first year and quarterly thereafter and shared with HAP leadership members. Leaders who needed extra training were asked to observe successful workshops, were teamed with successful leaders, and participated in full intervention training. If a leader remained subpar, they were asked to help HAP in other ways. HAP members, especially those at the state and county levels, felt that monitoring the fidelity of program implementation was a key element in providing effective EBP to Hawaii's older adult population.

Spread and Sustainability

A strong partnership with a clear mission between the Hawaii EOA, DOH, the University of Hawaii, and Area Agencies on Aging was important in the sustainability of HAP. The coalition maintains a clear mission to improve the health of Hawaii's multi-ethnic older adult population through EBP, delivered with high fidelity. A close partnership between the EOA and the chronic disease branch at DOH ensured that program development and implementation were successful through state-level leadership, planning, and coordination. The University of Hawaii provided necessary evaluation services to systemically plan program adaptation, collect participant outcomes, and monitor fidelity. The Area Agencies on Aging were essential in the implementation of EBP program due to their strong relationships with eldercare providers in their communities. HAP evaluates the partnership and sustainability of HAP programs through monthly meetings and annual reviews.

As of 2016, HAP has expanded to about 30 agencies and community stakeholders, including senior centers, FQHCs, community organizations, the Hawaii Primary Care Association, and National Kidney Foundation offices throughout the state. HAP partners play a role in delivering EBP to Hawaii's older adults including implementation, providing a site, and recruiting participants. HAP implemented EBP at nutritional sites, senior centers, residential facilities, park and recreational facilities, worksites, FQHCs, physician offices, and faith-based organizations. In recent years, HAP has also engaged community organizations that can provide transportation and fitness resources (e.g. tennis shoes) to participants. HAP representatives indicated that finding program champions was key to successful implementation, and that high turnover rate at the provider level was the main challenge for the sustainability of HAP programs.

Since 2003, HAP has diversified the types of EBP offered to Hawaii's older adults. With extensive leadership support from the chronic disease department at the Hawaii DOH, HAP introduced the Arthritis Self-Management Program (ASMP) and the Diabetes Self-Management Program (DSMP). In addition, HAP conducted clinical and behavioral evaluation of participants in DSMP. The most recent EBP adapted by HAP is a cancer self-management program called the Cancer: Thriving and Surviving Program (CTSP), for which the first instructor workshop was initiated in April 2016. HAP stakeholders have a commitment to helping older adults age well through disease-specific programs. The commitment of HAP members to disease-specific EBP, as well as a strong partnership between EOA and DOH enabled the expansion of EBP offered through HAP.

Key Elements for Sustainability and Expansion:

- The sustainability of HAP coalition is due to a clear mission and continuous partner engagement.
- Developing champions at all levels EBP adaptation and implementation.
- Ensuring proper training in evaluation and fidelity monitoring at all levels of implementation.
- The expansion of HAP programs relies on the readiness of providers to monitor the fidelity of EBPs and the ability of programs to fit into the mission of the provider organization.
- Building and maintaining relationships with community leaders is key to successfully engaging target populations.
- Educating legislators about the impact of evidence-based interventions and sharing evaluation data are essential to securing funding for HAP programs.

In 2011, HAP determined the return on investment for offering EnhanceFitness for one year at six sites was 1 to 1.7 (\$204,735 cost for offering the program compared to an estimated \$344,256 savings in healthcare costs).

Diversifying funding sources and using data to message the importance of EBP were key components for the sustainability of HAP programs. HAP representatives recommend collecting a variety of data, including participant behavioral and clinical outcomes, return on investment, and success stories to tailor messages about the importance of programs to a variety of audiences (e.g., providers, legislators, potential funders, and the general public). The HAP steering committee is working on diversifying funding for HAP programs by applying for a variety of grants, engaging new national and local partners, and pursuing new ways to subsidize program participation. HAP is also pursuing the development of a provider reimbursement mechanism. Overall, HAP representatives emphasized the importance of using data to leverage the importance of EBP in improving the lives of Hawaii’s older adults.

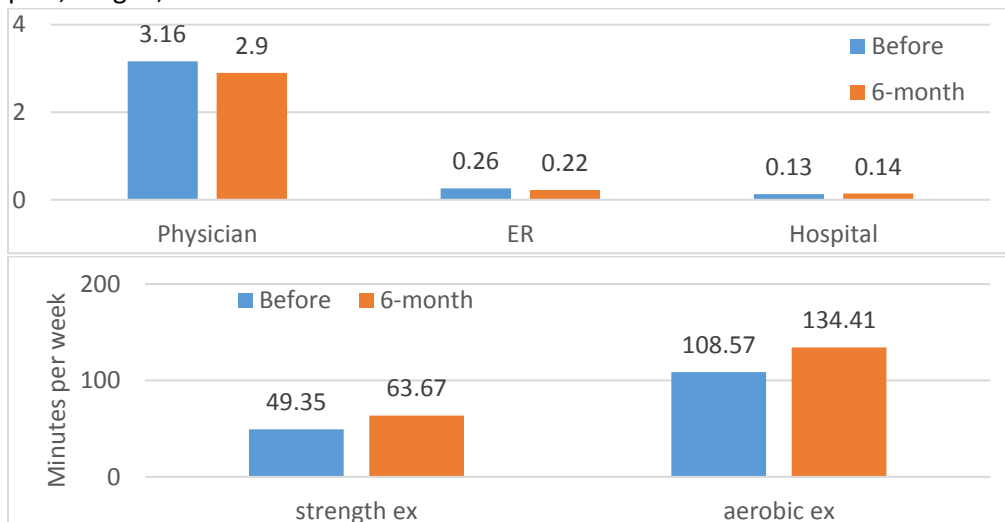
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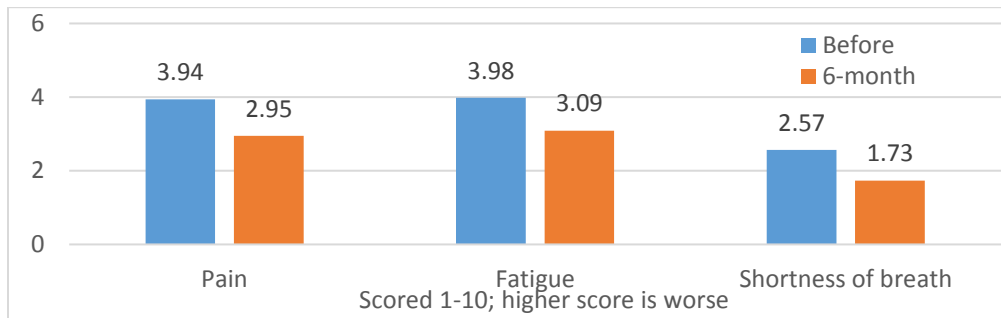
Chronic Disease Self-Management Program

Participant outcomes and completion rates indicate that CDSMP was replicated with fidelity. Researchers credited these higher-than-national-average completion rates to the successful adaptation of the program to Hawaii’s multi-ethnic population:

Hawaii’s CDSMP has completion rate of 87 percent, higher than the national average of 75 percent.

- As of January 2016, the Ke Ola Pono (CDSMP) program was completed by 2,456 older adults from a range of ethnicities (25 percent Hawaiian, 28 percent Filipino, 20 percent Japanese, and 30 percent white).
- Participant outcomes were consistent with those found by the original program developers in their clinical trial of CDSMP, including decreased physician visits, hospitalizations, emergency room visits, increased strength, increased minutes of aerobic exercise per week, and decreased pain, fatigue, and shortness of breath.²⁷



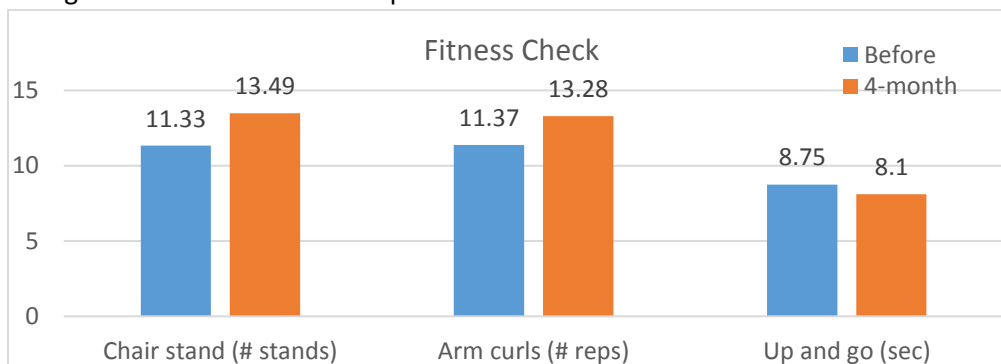


- A national study estimated that the return on investment for CDSMP programs is 1:2 when considering an approximate \$740 per person savings in emergency room and hospital bills.²⁸
- A study conducted by the University of Hawaii in 2011 found that the Ke Ola Pono program had a completion rate of 87 percent, higher than the national average completion rate for CDSMP of 75 percent.
- Fidelity data were collected for 71 CDMP workshops (99% of workshops), with trainers scoring an average 3.71 out of 4 on all fidelity measures.²⁹

Enhance Fitness

The participant outcomes for older adults in Hawaii that completed EnhanceFitness are consistent with the positive outcomes realized in the original testing of this EBP, indicating that Hawaii implemented EnhanceFitness with fidelity:

- As of January 2016, HAP has provided EnhanceFitness to 1,148 older adults from a range of ethnicities (8 percent Hawaiian, 15 percent Filipino, 32 percent Japanese, and 37 percent White). Many of these participants had at least one chronic condition, such as high blood pressure at 39 percent, arthritis at 40 percent, and diabetes at 21 percent.
- Participants that completed their first 16-week Enhance Fitness cycle experienced 11 percent fewer falls, a 42 percent increase in the number of days spent exercising per week, and increased chair stands and arm curls. In addition, participants indicated an average satisfaction rating of 9.5 out of 10 after completion.³⁰



- According to a national study, healthcare costs were on average 21 percent lower for participants who attended one or more Enhance Fitness classes per week. In 2011, HAP determined the return on investment for offering EnhanceFitness for one year at six sites was 1 to 1.7 (\$204,735 cost for offering the program compared to an estimated \$344,256 savings in healthcare costs).³¹

Diabetes Self-Management Program

Between 2011 and 2012, the chronic disease department at the Hawaii DOH collaborated with EOA to conduct a behavioral and clinical outcome assessment for DSMP participants:

- Participant outcomes were monitored before and after eight DSMP workshops for a total of 96 older adults. Participants were primarily Filipino (92 percent), reported difficulty understanding English (67 percent), and were living with diabetes and other chronic conditions, such as hypertension (74 percent) and arthritis (52 percent).³²
- The program was implemented with a high degree of fidelity since instructors for all eight sessions scored an average of 3.83 out of 4 on the fidelity monitoring tool developed by Stanford. All participants completed at least four of the six DSMP classes and 85 percent completed the post-intervention assessment.³³
- Behaviorally, participants showed an increase in the number of minutes exercised per week, including 52 percent who increased minutes spent in stretching and strengthening, and 42 percent who increased minutes spent in aerobic exercise. In addition, participants reported significant decreases in health distress, fatigue, shortness of breath, pain, and limitations in social activity and physical abilities. Participants reported decreased hospitalizations, ER visits, and physician visits in the six months after the eight-week workshop was completed, compared to the six months prior to joining DSMP.³⁴
- Participants also realized significant improvements in clinical outcomes including reduced BMI, total cholesterol, triglycerides, LDL, and blood pressure six months after program completion.³⁵

Lessons Learned

Using the ASTHO systems change framework, both state-specific and cross-cutting themes and lessons learned are framed below around the following systems change levers, which are essential elements in state efforts to make lasting systems improvements

- **Partnerships:** Developing strong partnerships at the agency and community level is crucial to creating champions at every level of EBP adaptation and implementation.
- **Policy and Practice:** Providing ongoing EBP, evaluation and fidelity training to program trainers and agency staff is important in building champions at all levels of program delivery. HAP has built a culture of fidelity by stressing the importance of monitoring fidelity at all levels of implementation.
- **Data Driven Action:** Engaging original program developers and community stakeholders to systematically deconstruct EBP and determine which program components can be adapted to fit the target population without compromising core program components. Stakeholders continuously evaluate participant data and monitor EBP fidelity to ensure effective program delivery.
- **Vision and Leadership:** The DOH and EOA are key to program development through state level planning and coordination.
- **Financing:** Collecting and sharing a variety of data on participant outcomes, clinical outcomes, return on investment, and success stories is important to educate funders and legislators about the impact of EBP.

Conclusion

The rapidly aging and shifting demographics of the older adult population in the United States indicate the importance for public health agencies to develop interventions that reduce chronic disease-related health disparities. EBPs are effective at reducing the symptoms and cost of care for older adults living with chronic conditions. Hawaii's successful adaptation and implementation of EBPs for a multi-ethnic population is a promising practice, demonstrating that culturally tailoring relevant EBP is possible and can improve health and quality of life of underserved populations.

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