



Attached are descriptions of the evidence-based behavior change/self-management programs available through MAC, Inc. Living Well Center of Excellence. Implementation of proposal will significantly reduce avoidable hospital utilization, reduce emergent risk among those newly diagnosed, and improve participant self-management skills through evidence-based patient engagement programs for people with multiple chronic conditions, including diabetes and hypertension.

The Center has strong partnerships with the Maryland Department on Aging, the Maryland Department of Health and Mental Hygiene, including the Divisions of Chronic Disease, Cancer and Injury Prevention, as well as Susan G. Komen National and the Maryland Chapter, and is currently partnering on a CMS national wellness project to document reductions in Medicare-related expenditures as a result of participant attendance in several of the above programs. The goal of this national project will be reimbursement of wellness programs for Medicare beneficiaries.

In addition, the Center is uniquely equipped to provide the above services:

1. The Center directly holds the license or operates under the Maryland state license to implement these evidence-based programs throughout the state and on the Eastern Shore.
2. The Center is designated as the state training hub to train Master Trainers and/or Leaders to implement these programs. Currently throughout Maryland, the Center of Excellence has a workforce of 70 Master Trainers and over 200 leaders certified to deliver these programs.
3. The Center manages all fidelity and quality assurance for workforce and program implementation across the state of Maryland.
4. The Center currently collects and manages all participant data for the state of Maryland. The database functionality also provides the ability to monitor continuous quality assurance.
5. The Center is currently working with the state and the database developer (Consortium for Older Adult Wellness - COAW) to expand and enhance the statewide database to include a statewide calendar of workshops and physician referral capability, as well as workforce certification.

Brief descriptions and documented outcomes are described below for Stanford University's Chronic Disease Self-Management, Diabetes Self-Management and NYQTAC Living Well with Hypertension and other programs.

## Stanford's Living Well Program Description and Outcomes

- **Chronic Disease/Chronic Pain/Diabetes Self-Management and Cancer Thriving and Surviving:** Stanford University developed, evaluated, and translated into practice self-management programs for English and Spanish-speakers with chronic health problems, as well as cancer survivors and caregivers. All programs are designed to help people gain self-confidence in their ability to control their symptoms, better manage their health problems, and lead fuller lives. Small-group workshops are given in community settings and are facilitated by two leaders/ facilitators with their own health problems. The workshops are highly interactive, focusing on building skills, sharing experiences, and support. Over 500,000 individuals have participated in the United States. The Chronic Disease program is available in 22 languages.
  - **Outcomes: Chronic Disease:** 1,170 participants who enrolled in a CDSMP workshop from 2010-2011. Sociodemo-graphic, health status, and behavioral data were collected at baseline, 6, and 12 months with 825 participants providing 12-month data. Among the results: 21% improvement in depression, 15% improvement in unhealthy physical days, 12% improvement in medication compliance, and a \$364 per participant net savings. Better health outcomes: 5% improvement in self-reported health; reduced fatigue (10%), pain (11%), shortness of breath (14%), stress (5%), and sleep problems (16%); 13% improvement in number of days per week being moderately active; 21% improvement in depression; better quality of life: 6% improvement on health-related quality of life; fewer sick days: 15% improvement in unhealthy physical days and 12% improvement in unhealthy mental days. *Med Care* 1999; 37(1):5-14); Whitelaw, N., Lorig, K., Smith, M. L., & Ory, M. G. (March 19, 2013). *National Study of Chronic Disease Self-Management Programs (CDSMP)*.
  - **Outcomes: Diabetes:** Participants demonstrated significant ( $P < 0.05$ ) improvements in health behaviors (exercise, relaxation, communication with physicians, eating protein for breakfast, number of portions of vegetables eaten, having a glucometer, and frequency of monitoring), health status (self-reported health, role function, fatigue, discomfort, and health distress), and trends toward less health care utilization. <http://journal.diabetes.org/diabetesspectrum/00v13n4/page234.asp>
  - **Outcomes: Chronic Pain:** People who have participated in the CPSMP have more vitality or energy, less pain, less dependence on others, improved mental health, are more involved in everyday activities, and are more satisfied with their lives compared to those who have not taken the program. The program has also been delivered and evaluated across 10 pain clinics in Ontario, Canada. Evaluation of the program found it to be beneficial for participants in terms of coping skills, education, and overall quality of life. To date, the program has been delivered to hundreds of individuals with chronic pain. LeFort S, Gray-Donald K, Rowat KM, Jeans ME. 'Randomized controlled trial of a community-based psychoeducation program for the self-management of chronic pain'. *Pain* 1998;74,297-306
  - **Outcomes: Cancer Thriving and Surviving:** Statistically significant improvement was observed among those in the intervention in the following outcomes: Provider communication (+16.7% change); depression (-19.1%); energy (+13.8%); sleep (-24.9%) and stress-related problems (-19.2%); provider communication (+23%); pain (-19%); problems related to stress (-17%) and sleep (20%): 'Meeting the Challenge of Cancer Survivorship in Public Health: Results from the Evaluation of the Chronic Disease Self-Management Program (CDSMP) for Cancer Survivors'(in press).

**Hypertension:** The Living Well with Hypertension module is utilized as a recruitment strategy for Chronic Disease and Diabetes Self-Management Programs. It is meant for people who have been diagnosed with hypertension or high blood pressure and who want to learn how to better manage their condition. Living Well with Hypertension is an interactive 2.5 hour educational module that uses a peer-led format similar to the Stanford Self-Management Programs. Module activities/topics covered during the workshop include: What is High Blood Pressure, Problems with Salt/Sodium Intake, Home Monitoring Tips, Where's the Salt and Knowing Your Numbers.

- **Outcomes:** Data gathered pre-session and seven weeks later from 2601 workshop session participants included five questions on knowledge of hypertension issues. On knowledge of hypertension there was an increase in correct answers from 2.93 to 4.34, a significant increase ( $p=.013$ ) that included increases in correct answers for all questions and dramatic increases in knowledge of sodium allowances (from 25% to 87% correct) and strategies to reduce salt intake (from 45% to 77% correct).

### Other Evidence-Based Programs Available

- **EnhanceFitness:** Ongoing workshop meets 1 hour, 3 times/week for group physical activity. Focused on 4 areas: Stretching and flexibility, Low impact aerobics, Strength training and Balance. EnhanceFitness helps older adults regain and maintain health and physical function. The University of Washington Health Promotion Research Center, and Group Health Cooperative, the program has been implemented at more than 500 sites nationwide, with more than 40,000 participants to date.
  - **Outcomes:** Centers for Medicare and Medicaid Services (CMS) described promising evidence suggesting that EnhanceFitness Program had driven down total healthcare costs, decreased unplanned hospitalizations, and decreased mortality rates for participating Medicare beneficiaries. Participation in the program was associated with an estimated total medical cost savings of \$945. Specifically, participants in an unplanned inpatient setting saw savings of \$545 and those in a skilled nursing facility setting saved \$139. Participation in the program helped decrease unplanned hospitalizations; one unplanned hospitalization was prevented during the outcome period for every 20–25 participants. Participants saw a decreased mortality rate; 1.4 percent versus 2.9 percent among controls. <http://innovation.cms.gov/Files/reports/CommunityWellnessRTC.pdf>
- **Stepping On Falls Prevention Program:** Seven week, 2 hours/session workshop includes strategies and exercises to reduce falls and increase self-confidence in making decisions and behavioral change in situations where older adults are at risk of falling.
  - **Outcomes:** *Stepping On* was developed in Australia and tested in a randomized trial where it demonstrated a 31% reduction in falls. An American version of *Stepping On* with support from the Centers for Disease Control and Prevention (CDC) has been tested in the United States and shown to achieve results similar to the original. <http://wihealthyaging.org/stepping-on>. Additional outcomes: The program participants maintained their confidence in their ability to avoid a fall during a variety of functional daily living tasks over the follow-up period, (P5.042) and Program

participants used more protective behavioral practices than the control subjects (P5.024), *The Effectiveness of a Community-Based Program for Reducing the Incidence of Falls in the Elderly: A Randomized Trial*, JAGS 52:1487–1494, 2004.

- **PEARLS (Program for Encouraging Active Rewarding Lives)** is a highly effective method designed to reduce depressive symptoms and improve quality of life in older adults and in all-age adults with epilepsy. Six to eight in-home or community sessions focus on brief behavioral techniques, Focus is on teaching each client the skills necessary to move to action and make lasting life changes and takes a team-based approach, involving PEARLS counselors, supervising psychiatrists and medical providers to improve quality of life as well as reducing depression symptoms and improving functional and emotional well-being.
  - **OUTCOMES:** The PEARLS Program was initially tested by the University of Washington using a randomized controlled trial in the community setting between 2000 and 2003. The main objective of this trial was to determine the effectiveness of the PEARLS Program as a treatment approach for managing minor depression or dysthymia in older adults living with social isolation, multiple chronic medical problems and physical impairment. The study evaluated the impact of the PEARLS Program on participants' levels of depression, quality of life and healthcare utilization. Participants in the study were 138 clients aged 60 years or older who received care from community senior service agencies in metropolitan Seattle; just over half (51.4%) had minor depression and the remainder had dysthymia (48.6%). Half of all participants were randomly assigned to receive the PEARLS Program, and half were randomly assigned to continue with their usual medical care. This study showed that over 12 months, individuals who received the PEARLS Program were more likely than those who did not receive PEARLS to: 1) Have a 50% or greater reduction in depression symptoms (43% of PEARLS recipients vs. 15% of the usual care group).; 2) Achieve complete remission from depression (36% of PEARLS recipients vs. 12% of the usual care group); 3) Have greater health-related quality-of-life improvements in both functional and emotional well-being.; and 4) Demonstrated a trend toward lower hospitalization rates among those who received the PEARLS Program compared to those who did not. <http://www.pearlsprogram.org/Our-Program/Research-Findings/Dissemination-Implementation.aspx>

**Tai Ji Quan** consists of an 8-form routine core with built-in practice variations and a subroutine of *Mini-Therapeutic Movements*, which collectively comprise a set of simple yet therapeutic and functional Tai Ji Quan-based moves. The program also includes individual forms and movements that have been transformed into therapeutic applications for improving ankle stability, effective weight transfer, active eye–head movement, and spatial orientation, as well as enhancing skills directly transferable to daily functional activities such as reaching, transitioning from sitting to standing, stepping and turning, and walking. The goal of these exercises is to adapt and integrate sensorimotor systems, refine postural control and movement strategies, improve gait and locomotion, strengthen lower-extremity muscles, and increase flexibility. These exercises in the subroutine can easily be integrated into practice sessions of the overall program.

- **Outcomes:** This economic evaluation study that involved a secondary analysis of falls data from a trial involving people with Parkinson's disease. The analyses showed that, over the course of a 6-month study, the Tai Ji Quan program had both the lowest

cost among three interventions and was the most effective in reducing incidence of falls. Specifically, the Tai Ji Quan program cost US\$8 less per additional fall prevented and US\$4446 less per additional quality adjusted life year (QALY) gained compared to a Stretching intervention, and US\$79 less per fall prevented and US\$72,649 less per additional QALY compared to the difference between a Strength intervention and a Stretching protocol. Sensitivity analysis showed robustness in the estimates of costs per fall averted and QALY gained with Tai Ji Quan relative to the Stretching comparator program. It was therefore concluded that compared to conventional strength training or stretching exercises, Tai Ji Quan training appears to have significant potential as a cost-effective strategy for preventing falls. <http://www.sciencedirect.com/science/article/pii/S2095254613000963>