better LIVING!

UNITE HERE HEALTH

¡vivir MEJOR!

Better Living Final Report

Ivana Krajcinovic

Senior Director of Healthcare Delivery

UNITE HERE HEALTH

March 2015




Table of Contents

In Memoriam

Better Living Graduates

Victor Casquino
Steward
Beverly Hilton Hotel, LA
01/22/50-12/17/12

Amilcar Dominguez
Purchasing Receiver
Millennium Biltmore Hotel, LA
01/24/62-12/22/13

Roberto Santos
Steward
Westin Bonaventure Hotel, LA
10/16/56-12/31/14

Introduction

UNITE HERE HEALTH (UHH)[1] was introduced to Stanford's Chronic Disease Self-Management Program (CDSMP)[2] – since branded as "Better Living" – in the fall of 2011. In a noteworthy coincidence, both Dr. Alan Glaseroff of the UHH Brain Trust and Dr. Joel Hyatt, Assistant Medical Director of Kaiser Permanente in Southern California separately recommended this program as a way to leverage UHH's unique ability to motivate and mobilize participants to join a program that had been shown to increase the ability of those with chronic conditions to self-manage, resulting in improved health and lower costs.

There are no better advocates for the program than its graduates. Their stories of successfully learning to change behaviors are inspiring:

Carlos Anria

Cook
American Museum of Natural History
New York
10 years of service

"I've had diabetes for over 20 years and the doctor has always told me that I need to change my diet. ***I didn't know how to do it by myself and I felt really alone***.

"The Better Living group gave me a lot of support and for the first time, I'm sticking to my goals. ***Now that I started taking better care of myself, I feel so much more confident and happy***! And I'm inspired to help my co-workers make better choices for their health."

Jean Homer Lauture

Local 100 organizer, New York
7 years of service

"I joined Better Living and made the big commitment to cut sugar in my diet. I have lost 13 pounds and my blood pressure has stabilized. I used to consistently have blood pressure of 140+/120+. Sometimes it would even be 180/140!

"Now I'm down to 126/90, which is a huge improvement. If I keep this up, I can get off the blood pressure medication. This really important for me because ***my mother passed away due to complications with high blood pressure--her kidneys failed. I feel so much more energetic now!*** And I don't fall asleep in staff meetings anymore, which makes everyone else pretty happy."

[1] See Appendix III for a description of UHH.

[2] See Appendix I for a description of CDSMP.

This report summarizes the first three years of the Better Living program and presents the results of a formal third party evaluation of the pilot program in Los Angeles (LA) and Orange County (OC).

Specifically, this report includes:

- A description of CDSMP and the enhancements we've made to the program;
- A discussion of how UHH achieved success in recruitment and participation, and expanded to other geographic areas;
- The evaluation and its conclusion that Better Living improves health status (the evaluation was not able to determine if utilization was changed at this time);
- The conclusion that the program produces at least modest financial returns for UHH;
- A description of how the program creates a community of health;
- And next steps for the program.

CDSMP's founder, Kate Lorig, DrPH, Professor Emerita Stanford University School of Medicine, Director Stanford Patient Education Research Center, provided invaluable advice as we developed our program. She recently remarked,

> "I am amazed and thrilled with the success of UNITE HERE HEALTH use of the Stanford Self-Management Programs. This serves as a model for other Unions and workplaces. Participants, leaders, and administrators are to be congratulated for their foresight, hard work and better health."

Three different videos of UHH participants sharing their experiences in the Better Living program can be viewed on YouTube:

http://youtu.be/_FnYn17Ux7o (Spanish)
http://youtu.be/dH_euT2kEZI (English)
http://youtu.be/rQ-tFfblx-s (English)

Program Inception:
The Los Angeles & Orange County Pilot Program

Our participants in LA and OC have access to a comprehensive Kaiser Permanente (Kaiser) plan[3], yet they have higher rates of diabetes and hypertension than the average southern California Kaiser member. For example, at the end of 2013, 8.9% of our participants in LA /OC had diabetes as compared to 5.7% of Kaiser members and 9.2% suffered from hypertension as compared to 7.9% in Kaiser. Even more alarming is that the rate of diabetes is rising faster in our population than in the average. Roughly 21% of our participants in LA /OC (about 3,900 participants) have one or more chronic conditions, generating almost 53% of our total costs. Kaiser estimates that 80% of our population is Latino.

In 2012, the UHH Board of Trustees approved a pilot program to test our ability to help participants with chronic conditions better self-manage their conditions with the goals of improving their health, decreasing unnecessary utilization of services, and reducing costs to the Fund. Using the CDSMP model we set the following goals:

- Get as many workers and their spouses with chronic conditions through the workshops as possible. As shown in Appendix II, in the period from 2012 to 2014, 775 participants enrolled in the program and 667 graduated.[4]
- Identify and train our own participant leaders. At the end of 2014, we had 16 active volunteer leaders.
- Train our own staff to run the program. In 2012, UHH assigned two FTEs to this program which grew to the current 2.5 FTEs.
- Standardize the program where possible (e.g. recruitment, communications, graduate meetings, database) so it can be exported to other parts of the Fund. In 2013, the program expanded to Chicago and New England; in 2014 expansion continued to Washington, D.C. and New York City; and in 2015 we began offering the program in Boston.

Since 2012, Kaiser provided the materials, workshop facilitators as needed, and facilitator trainings to our group. Typically we have hosted between three to six concurrent series of six 2½ hour workshops in the LA and OC UHH offices at convenient times for our participants, normally at 9:30am for second shift workers and 5:00pm for first shift workers.

UHH staff working as "Health Promoters" target and recruit participants for the program. Candidates from the program come from three main sources: 1) Health Promoters speaking to workers in worksite break rooms and at union meetings, 2) recommendations from program graduates, and 3) lists provided by Kaiser and from our claims data of participants with chronic conditions, gaps in care and high risk factors.

Health Promoters visit workplace break rooms to find and meet candidates for the program on their non-work time. These interactions are brief and ideally serve to establish an appointment for a longer conversation in a more private setting. In some cases, Health Promoters will cold call or visit candidates in their homes if they have not been able to find them at work. During the longer private meeting, candidates are interviewed by Health Promoters to assess compatibility for and commitment to the program.

---

[3] Participants also can choose a comprehensive PPO in LA and another comprehensive HMO Health Net in OC. In LA, 98% of the participants choose to enroll in Kaiser. In OC, about 74% are in Kaiser and 26% are in Health Net. For this population overall, 91% are in Kaiser and the remainder are in Health Net or the PPO.

[4] "Graduates" are defined as having completed at least four of the six workshops.

Taimi Torres

Head Cashier
Pratt & Whitney
East Hartford, CT
4 years of service

"I knew I needed to go to Better Living, but that first day I almost didn't make it, I was feeling so sick and was so in pain. My Health Promoter called me up, made me get on a bus and come to class, even though it was wicked cold.

"And look at me now! I'm eating better and sleeping better. I can go a whole day without being in excruciating pain, and I even got a new boyfriend!"

In order to enroll in the program, the participant must complete a Stanford-designed questionnaire about their health (see Appendix E in Appendix IV) and a pledge form that expresses their commitment to attend all workshops. Health Promoters often have multiple conversations with candidates over months as they continually encourage them to enroll workshops.

Health Promoters also contact participants between workshops to discuss their progress toward reaching individual goals set in the workshops and to remind them about upcoming workshops. Health Promoters continue to reach out to program participants after graduation (see below). Health Promoters have been trained to lead workshops.

There are two key components to Health Promoters being successful in recruiting. First, Health Promoters must quickly build relationships with participants. UHH Health Promoters are uniquely positioned to do this since they can leverage the relationship the union has with its members. When Health Promoters approach workers in break rooms or call them at home, workers perceive them to be an extension of the union, an organization that cares about their well-being. This is different from being approached by a commercial health plan or an employer where workers may perceive the motive for the outreach to be mostly about saving money for another party.

Second, in order to start the program, Health Promoters must have considerable organizing skills, much like *promotoras* or community health workers. They must be able to develop creative plans to find and meet candidates; empathize and connect with participants; listen closely to their concerns; be able to draw out their goals and aspirations for a better life using techniques like motivational interviewing; assess commitment to attending workshops; inspire candidates to enroll; and motivate enrollees to continue participating.

When the LA program started, similar to the experience in later expansions to other cities, the union was key to providing support in both areas mentioned above. The local union helped introduce Health Promoters to the first workers to enter the program, improving the chances that a connection would be made. The local union provided training for Health Promoters who were hired without much organizing background. Once the program was established, the Health Promoters were able to more easily make connections with workers who were also more likely to be aware of the program. Over time, Health Promoters developed the ability to recruit participants without regular assistance from the local union.

Program Enhancements in LA/OC

We enhanced the basic Stanford CDSMP program with four initiatives:

1. Conducting monthly meetings for graduates of the initial six-week program
2. Training rank-and-file participants to be workshop leaders
3. Reimbursing graduates with consistent attendance for their maintenance drug copays
4. Providing a texting program for graduates

Each of these initiatives is described below.

Monthly meetings for Graduates

CDSMP is designed as a six-week program with little structured follow-up besides surveys after the program's completion to track the graduates' progress. We believed that the program's results could be enhanced by offering a regular series of monthly meetings for graduates to continue obtaining support and education on how to improve their self-management techniques.

Graduate meetings are run by UHH staff and Volunteer Leaders with some educational sessions led by Kaiser health educators. The agendas include small group discussions on personal goals and continuing education on healthcare topics[5] as well as cooking demonstrations and raffles to lighten the mood. The majority of workshop graduates attend monthly meetings (see Appendix II) where they report progress and continue to draw inspiration and motivation from meeting with other graduates, as well as continue to learn new health-related information.

Over time, staff has observed that graduates tend to attend more meetings in their first year after graduating. In December of 2014, staff visited 42 program graduates who had not been attending graduate meetings to determine why they had stopped coming. Half of the group reported that they were in good health, had made the necessary changes to better self-manage and didn't feel the need to continue coming to meetings. Thirteen were observed to be in fair health and seven were in poor health. Nine of the 42, (21%) came to the next graduate meeting and five signed up for a new diabetes version of CSDMP that was first offered in 2015, a testament to the power of in-person follow-up and skilled mobilization. Many noted that they were too busy to come to meetings or could not attend at the times offered.[6]

A sample of graduate meeting education topics:

- Coping with stress
- Arthritis
- Strokes and Blood pressure
- Patient Empowerment
- Asthma
- Ergonomics at work and home

Javier Anguiano

Banquet Server
Line Hotel, LA
38 years of service

"I have had diabetes for 28 years. I have always taken several medications and also take insulin to control my blood sugar. I was one of the first people to take Better Living and ***have been coming to graduate meetings for the past three years.***

"In these meetings I finally learned how to take care of myself. I learned to eat healthier and finally got the motivation to exercise regularly. I am now eating a lot healthier and I go to the gym 3-5 times a week. I've lost 3 pant sizes and with all the changes, ***I no longer need to take insulin to control my blood sugar***."

[5] Educational components of the monthly meetings developed by UHH staff are reviewed by the UHH's National Medical Director.

[6] These reasons are consistent with the results of the evaluation (see Appendix IV).

Alex Rivas

Houseman, Disney's Grand Californian Hotel, OC
Retired after 13 years of service

"Before I entered the program, I was in very bad health. I had suffered a stroke the year before and my triglyceride levels were still three times what they are supposed to be.

"In the program I finally learned what I needed to do to manage my cholesterol and control my blood pressure, by eating the right foods. I finally have reduced my triglycerides levels to normal and I feel much better.

"***I am so happy with the program that I have stayed on as a volunteer, even though I have recently retired***."

This set of encounters suggests two conclusions: 1) staff were correct that the graduate meetings are most useful for recent graduates still learning self-management skills and 2) a significant proportion of graduates may fall back into poor health over time and require individualized attention to regain their footing.

Volunteer Leaders

The CDSMP workshops are led by two facilitators who have been trained according to a protocol designed by Stanford. Part of the work of the Health Promoters is to identify, recruit and train graduates of the program to become Volunteer Leaders (VLs). We believe that the best VLs are those who themselves have graduated from the workshops and are successfully managing a chronic condition. Moreover, we believe that VLs who work in the hospitality industry and come from the communities represented in the participant base will be more successful in guiding the groups.

There are currently 16 VLs in LA/OC, some of whom are trained to lead workshops and all of whom help lead monthly meetings and are responsible for calling a regular list of 30 to 40 graduates to remind them to attend monthly meetings. The leaders also provide valuable feedback for the program, help set graduate meeting agendas, and help recruit participants. VLs meet regularly to learn the skills to lead meetings as well as to identify and recruit participants. Eight of the current VLs completed a four-day facilitator training session sponsored by Kaiser, certified by Stanford and led by CDSMP certified master trainers. VLs are paired with a mentor – a Kaiser health educator or a seasoned VL -- for at least the first two workshops they lead.

VLs greatly expand the capacity of the program without increasing costs. When VLs lead workshops, staff can focus on recruiting and developing other leaders. VLs help identify co-workers for the program and often make the first outreach to candidates about the program. Some advanced VLs are able to do full recruitment visits on their own in scheduled and unscheduled meetings away from the workplace.

While other CDSMP programs typically provide modest stipends for VLs who lead workshops, our VLs rejected any form of payment.[7] Many are used to volunteering for their union and the notion of being paid for what is commonly viewed as an extension of the union just didn't make sense to them. More importantly, VLs uniformly state that they act as leaders not to get paid, but rather to help teach others the lessons they were fortunate enough to learn themselves. Making the program voluntary better ensures that leaders are in it for the right reasons, not just for monetary remuneration. VLs also derive personal benefits from the program as leading others forces them to model successful behavior. Two leaders in LA continued volunteering even after being placed on permanent disability, in part because VL activities help them deal with the depression that can accompany leaving the workforce.

[7] VLs are reimbursed for incurred program–related expenses, most commonly mileage in instances where they drive their own cars for recruiting activities and lost-time wage compensation for trainings that take place on work time.

VLs are carefully recruited after observation of their participation in workshops and graduate meetings. Staff and seasoned VLs look for graduates who are active listeners, can empathize with others, have consistent attendance and make significant progress in managing their health. VLs are required to have some degree of literacy as they must follow the Stanford-based curriculum. However, because these materials are available in Spanish, Latino VLs are not required to speak English.

Developing and managing VLs requires significant attention from seasoned Health Promoters. Typically Health Promoters meet once a week with each VL to go over assignments and provide training. Most VLs lead challenging lives as they deal with their own chronic conditions, work physically demanding jobs, juggle family responsibilities and deal with the stress of living in low income communities. Health Promoters must be sensitive to these challenges while encouraging VLs to actively participate in a program that helps them and others like them stay healthy, physically and emotionally.

VLs normally volunteer four to six hours per week doing some combination of leading workshops or meetings, recruiting, calling graduates to remind them about monthly meetings and meeting with their Health Promoter. Bi-annual dinners are held to recognize the work of the VLs and to help build camaraderie within the team. Since the program's inception in LA, 23 total VLs have been recruited and 16 continue to actively lead the program.[8] Seven VLs have been leaders for more than two years and an additional three have been leaders for more than three years. We believe this length of tenure for VLs is rare among organizations that sponsor CDSMP and is a testament to the loyalty the VLs feel to their plan.

Maria Luisa Posadas

Lobby attendant, Sheraton Park, Anaheim
34 years of service

"Seven years ago I was diagnosed with lupus. My diagnosis came after a very long and difficult process. Although I knew what I had, I didn't know how to control it. I resigned from my local's Executive Board, I stopped participating with my union, I missed days and even weeks of work because I couldn't get out of bed. This was very difficult for me because I loved my work and being a part of my union.

"When I was approached about the Better Living program I was very skeptical. I thought to myself, 'what do these people know about what I'm going through?' I said 'no', but after much insistence from the Health Promoter, I accepted and signed up.

"The workshop changed my life in ways I never imagined. I finally learned how to identify the signs of an oncoming health crisis and what steps to take to minimize it. I learned the importance of taking my medication, watching what I eat and taking care of myself. ***Most importantly I finally learned to accept that I had lupus, and that having a chronic condition, I have to take steps to live with it***. My life has changed for the better, I've learned how to manage my lupus and I also have a support system to go to when I'm having a hard time.

"I stayed on as a volunteer after I graduated from the program because I want to help others learn to control their conditions in the same way that I did. ***I want to encourage people in the same way that I was encouraged to join the program because I know how they feel and I know how much this can help them***. But most of all, I've stayed as a volunteer because being in the workshops and the meetings gives me a support group that encourages me to keep going, when I'm struggling."

[8] The seven that stopped being VLs all stopped leading within roughly their first year as leaders. Two are still active in the program, attending graduate meetings and/or helping recruit candidates.

Reimbursement of Maintenance Drugs

Graduates of the program who attend six monthly meetings (total, not consecutive) qualify for reimbursement of up to $100 each month for copays on their maintenance drugs for each month they attend a monthly meeting. In LA participants pay $10 per generic and $25 for brand medications and in OC the benefit is $15 for generics and $30 for brands.[9] The medication reimbursement feature of the Better Living program recognizes the work the graduates with consistent attendance are doing to better manage their chronic conditions. The reimbursements were designed to incentivize participants to enter the program, and to continue attending workshops and monthly meetings. Finally, anecdotal evidence suggests that many participants struggle to make the copayments. Many people go without their medications and/or don't take them as often as they should in order to save money. Reimbursing participants who are consistently working on their self-management should improve medication adherence and further enhance their efforts to manage their chronic conditions.

Surprisingly, only about 10% of the graduates applied for reimbursement in the first 22 months of the program. As shown in the table below, about half of the group only asked for reimbursements for a month or two and about a quarter appear to rely on reimbursement more regularly.

Juan Carlos Rosales

Concession stand worker, Dodger Stadium, LA
20 years of service

"I work at Dodger Stadium and because our work is seasonal, there are several months throughout the year where I am without insurance. I try to prepare for those gaps as much as possible, but it's always difficult. I am diabetic and my wife is also diabetic. ***Before I came to the program, my wife and I would have to share our medication*** during the times when we couldn't afford to buy it for the both of us.

"Now that I am in the program, not only am I learning to be healthier, but I am receiving financial help for my medicine. ***The monthly medication reimbursements have made it possible for me to purchase my own medication***, so we can both take our medication the way that we are supposed to."

It is possible that the eligibility rules for this program prevent more graduates from taking advantage of reimbursements. Therefore, in March 2015, the Board of Trustees will consider reducing the number of graduate meetings required to become eligible for reimbursement from six to three. Participants in the program will still be required to graduate from the initial six workshops and continue attending monthly meetings in order to receive reimbursements.

Prescription drug reimbursement program	
Time period	1/15/2013-11/1/2014
Total reimbursements	227
Total amount of all reimbursements	$12,053
Average amount of reimbursement	$53.10
Number of graduates receiving reimbursements by number of reimbursements	
1-2 reimbursements	33 graduates (49% of reimbursed group)
3-4 reimbursements	17 graduates (25% of reimbursed group)
5-11 reimbursements	17 graduates (25% of reimbursed group)

[9] The Health Net prescription drug benefit in OC is $10 for generics and $30 or brands.

Texting

Our participants are heavy users of cell phones but less likely to use computers and the Internet.[10] CareMessage designed a texting program for our group to enhance and expand our communication with graduates.[11] Members voluntarily enroll in the program, which sends 3-5 text messages per week that include meeting reminders, educational content specific to their chronic condition, reminders to follow action plans and encouragement to engage in healthier habits (e.g. "Take the stairs today!").

The texting program began in December of 2013 and was offered to all graduates who continued to come to graduate meetings and to new graduates of the program in their final workshop. The current rate of enrollment for new graduates is roughly 30%. The most common reason graduates choose not to enroll is that they do not know how to text.

UHH currently offers two education streams developed by CareMessage, one on diabetes and another with more general wellness information with about equal proportions of graduates receiving the two streams. The streams are created by a multidisciplinary team of physicians, psychologists, health educators, and user experience designers that work together to create programs that improve health literacy and disease self–management skills for diverse populations.

A description of messages for both streams is below:About half the messages in both streams allow users to respond to Yes/No, True/False or multiple choice questions. About 33% of users in both streams choose to respond. The texting program also sends reminders about monthly meetings. The response rate to these messages is 39% and 27% of graduates in the texting program both confirm and attend the meetings.

The graduates who use texting report that they like the service and over 85% stay in the program despite regular reminders that they can stop the information streams.

Beatrice Lopez

Concessions Stand Lead, Dodgers Stadium, LA
25 years of service

"It's a reminder of something I said I was going to do - I'm gonna walk on a daily basis. It does serve as ***a reminder of a commitment***."

Diabetes Messages:

- Understanding glucose numbers with action plans for highs and lows
- Importance of testing A1c, blood pressure, cholesterol as well as eye, dental and kidney exams
- The healthy plate, carbs, sugary drinks
- Exercise tips and injury prevention

Wellness Messages:

- The healthy plate, carbs, proteins and fats
- Reducing sugary food and unhealthy food
- Increasing fruits, vegetables and healthy snacks
- Exercise tips and injury prevention

[10] Kaiser reported in early 2014 that only about 25% of UHH participants over age 13 were registered at KP.org as compared to about 60% of their total membership. The portion of active KP.org users is likely to be smaller among older participants like the ones enrolled in Better Living.

[11] CareMessage is a non–profit focused on improving health literacy and patient engagement using mobile solutions for underserved communities to improve health outcomes and reduce cost (CareMessage.org).

Pilot Program Evaluation

Better Living graduates are enthusiastic in their praise of the program. Karen Webb's story is typical:

Karen Webb

Cashier
Chicago Hilton
6 years of service

"***I am profoundly grateful to have been a part of this program***. I've been motivated to get healthier, and have learned to make better decisions about my health.

"I've also learned to watch my portions and to make better decisions about what I eat. I've discovered alternative ways for relaxation and pain management. I've learned the importance of goal setting. The workshop environment gives me confidence that those goals are attainable. I have learned to use the tool book we were given and what I learned in the program to deal with my pain and emotions so I haven't had to go back to the doctor since graduating for these things."

Almost half of the program graduates have perfect attendance at the workshops – no small feat for a population that works hard and must take time away from the demands of family life to attend a 2 ½ hour workshop every week for six consecutive weeks. Our hope is that the excitement for the program translates into savings that ultimately filter back to the participants in the form of higher wages.

Better Living's core, CDSMP, has been shown repeatedly to improve health and utilization of health care. While CDSMP has been well-studied, it has mostly been used by the Medicare population, a group that is older than our population and has more free time to spend attending a program that requires a significant time investment. Moreover, typical CDSMP programs enroll relatively few non-whites, few non-English speakers and a disproportionate number of women. We were curious to see whether we could achieve the same results with a population in LA/OC that was much more heavily Latino, Spanish-speaking, working and more evenly weighted between men and women. We knew that our participants' attachment to UHH and Better Living would allow us to study the effect of the program beyond the six to twelve month time frame of most national studies.

Dr. Molly Coye of the Brain Trust introduced us to the non-profit Partners in Care which performed the evaluation of the program with a $25,000 grant from the California Health Care Foundation. UHH maintains some data on the participants since we enroll them in coverage. We know their ages, addresses, phone numbers, number of dependents, workplace, and how long they have been working for participating Employers.[12] Kaiser has provided data on participants' utilization and biometrics.[13] The final report was prepared by Zina Kally and is included in Appendix IV.

Kally's report underscores what we have been hearing in worker stories and seeing in the attendance. Namely, using data from Stanford-developed questionnaires and biometric data supplied by Kaiser, graduates of the programs show statistically significant improvements in a wide variety of areas, including better reported health, less depression, improved shortness of breath and pain, leading more active lives, and better communication with their doctor. Graduates have also decreased their Hemoglobin A1C, LDL cholesterol, BMI, and blood pressure levels.

We also hoped to see positive impacts on utilization as national studies have shown decreases in inpatient and emergency room use after program completion. While the evaluation did find decreases in inpatient and ER use, they

[12] In LA/OC, Employers report all hours worked for each employee, regardless of whether they have enough hours to become eligible for coverage.

[13] Participants sign releases authorizing Kaiser to release biometric data.

were not statistically significant. We suspect this is due to the fact that our population was simply in better health as a younger and working population than the predominantly Medicare-based populations in the national studies. We are considering extending the study for another year to see if the differences become significant over a longer time period than the one year in this report.

Even without conclusive findings on utilization, the improvements in biometrics can be used to extrapolate future savings. The UHH Informatics department reviewed the literature on the degree to which improvements in health measures result in cost savings and built a model to project cost savings based on our biometric results. Their model estimates, conservatively, that there should be a $200,000-$250,000 savings from just one year. These savings would continue into the future if the graduates maintained or improved their results past the first year. This range of savings is roughly the amount of the annual program costs to UHH in each of the first two years of the program in LA/OC. Moreover, Kaiser provided a significant discount in our 2014 renewal contingent upon our continuing the program.[14]

We built on the CDSMP model by offering monthly meetings to provide ongoing support and education for graduates of the initial six-week program. This evaluation is the first one that looks at whether graduates who attended monthly meetings had better outcomes than those that did not. The study only found a significant difference in one measure – the amount participants communicate with their doctors. This finding is significant as activated patients have a better patient experience and lower costs.[15] It is possible that a lack of self-reported data from those who did not attend meetings combined with some evidence that those that didn't attend began in somewhat better health than those that did is driving the lack of broader results here. Nevertheless, it is an important finding that the program can still be successful in places where it is difficult to offer monthly graduate meetings, as in geographically dispersed worksites like those in Food Service. Additionally, offering low-cost monthly meetings serves as a forum to continue interacting with participants and to train volunteer leaders.

Lonzie Bryant

Runner
NBC, NY
14 years of service

"I just got diagnosed with diabetes 6 months ago. I didn't really understand what I was supposed to do differently. I thought all I had to do was take the insulin. Well, a couple months after I was diagnosed I started to feel really bad. I got very dizzy and sick. When I went to the doctor they told me to go to the emergency room right away because I was on the verge of a diabetic coma. I could have died. ***I was in the hospital for 3 weeks***. When I got out, I joined up with Better Living.

"I've learned so much because of this group. I learned there is a whole lot more to diabetes than taking insulin, I learned how to eat right. As a result of my eating right, my whole family is eating better. ***Better Living gave me the guidance that I needed so that I wouldn't end up back in the hospital***. I feel like a wiser, better me!"

[14] One of the first studies of CDSMP was done in conjunction with Kaiser in the late 1990s on a group similar in size to ours but with different demographics. During a one-year period, study participants had fewer hospital days and fewer emergency department visits, the major cost drivers in any plan. Kaiser concluded the savings for the 489 subjects who completed the study were nearly $400,000 (in 1998 dollars), a 1:4 cost-to-savings ratio. David S. Sobel, Kate R. Lorig, Mary Hobbs, "Chronic Disease Self-Management Program: From Development to Dissemination," The Permanente Journal, Spring 2002, Vol. 6, No. 2.

[15] "Patient activation is defined as understanding one's own role in the care process and having the knowledge, skills, and confidence to take on that role." Judith H. Hibbard, Jessica Greene and Valerie Overton, "Patients With Lower Activation Associated With Higher Costs; Delivery Systems Should Know Their Patients' 'Scores'," Health Affairs, 32, no.2 (2013):216. See also Jessica Greene, Judith H. Hibbard, Rebecca Sacks and Valerie Overton, "When Seeing The Same Physician, Highly Activated Patients Have Better Care Experiences Than Less Activated Patients," Health Affairs, 32, no.7 (2013):1299-1305.

We are considering refining the evaluation. By analyzing the data after another year, we may see more conclusive results on utilization. More data will also allow us to study the impacts of the prescription reimbursement and texting programs. Since workers have long term ties to their union jobs, it is worthwhile to invest in programs that have longer run returns.[16]

In summary, taking into account participant feedback and participation, the results of the formal evaluation, and the reality that we can't capture all the benefits of the program, we're confident that the Better Living program is producing at least modestly improved financial results with respect to this population. Furthermore, with more time we will be able to build in more volunteer leadership and reduce reliance on staff as we continue to enroll participants who have less control over their conditions. For these reasons, we will ask the Trustees to accept the results of the pilot program and make Better Living a regular offering of UHH.

Program Expansion

In 2013, UHH expanded the Better Living program to Chicago and to Food Service participants in New England. The program expanded further the following year to Washington, D.C. and New York and then to Boston in 2015. UHH staff that work directly with participants have participated in workshops since the program's inception so that they are better able to understand and promote the program. In 2015 we held our first workshop for operations staff with chronic conditions in our Aurora office. Progress in these areas was slow until UHH assigned dedicated staff to the program. Once Health Promoters have been hired and fully trained, we expect to see attendance, graduation rates, and VL recruitment similar to those of LA/OC in its first stages.

Not all the aspects of the LA/OC program have been adopted in other areas. First, regular graduate meetings are not currently offered to Food Service participants in New England. Participants are geographically dispersed which makes it hard to find times and locations that are convenient to host regular meetings that draw from graduates of different workshops. As the evaluation suggests below, this does not appear to hamper the improvements in health status achieved by only attending the initial six workshops.[17] Second, medication reimbursement has not been offered outside of LA/OC. The relatively low take-up rate in LA/OC suggests that medication reimbursement is not a critical part of the program. Some other regions also have lower

[16] The LA Fund merged into UHH in 2011. UHH has work history back to 2008, and some eligibility going back to as far as 1997. Better Living graduates have, on average, 12 years of service in this truncated time period.

[17] We are experimenting with occasional meetings of graduates in this area.

medication copays than LA/OC[18] and since Food Service doesn't offer regular graduate meetings, reimbursement could not be tied to graduate meeting attendance as in LA/OC.

In 2015 UHH began offering Stanford's diabetes version of CDSMP, called DSMP, in Chicago and in LA. Diabetics face significant challenges in managing their health and are expected to benefit from workshops tailored to their needs, providing a deeper level of education about diabetes than the regular CDSMP workshops. Some graduates of the CDSMP workshops in LA have enrolled in the diabetes version to better learn to self-manage their condition.

Creating a Community of Health

There is considerable anecdotal evidence that Better Living has positive spillover effects on graduates' families and co-workers. Graduates become living examples of improved health by changing their behaviors. They also model healthy habits. For example, as they improve their diets, they often invite their families to change their eating habits. Couples frequently the program together and are therefore able to reinforce behavior changes at home with each other.

UNITE HERE workers are provided meals at work, affording graduates another forum to share their healthy eating habits. Better Living graduates frequently note that co-workers will ask them about changes they've made to their diets, especially when they notice changes in weight, energy levels and eating habits.

Maria Bruno

Housekeeper, Anaheim Hilton
4 years of service

"My family used to be very active-we used to camp, play soccer and be very involved in different groups with our kids. ***When my husband was diagnosed with diabetes 13 years ago, everything changed***. We didn't know how to manage all of the changes that a chronic condition brings and my husband also didn't know how to control his diabetes. I signed us up for Better Living because I wanted to learn more about managing his health.

"In the program my husband learned a lot and got the motivation to make changes in his health. Now he is finally managing his blood sugar, by eating better and exercising more. He is doing so well, that his doctor has been reducing the amount of insulin that he has to take. The program also motivated me to make healthy changes and I lost 30 pounds. ***The program has really helped me and my family*** and now I volunteer for it, so it can help others in the same way."

Luis Weber Salcedo

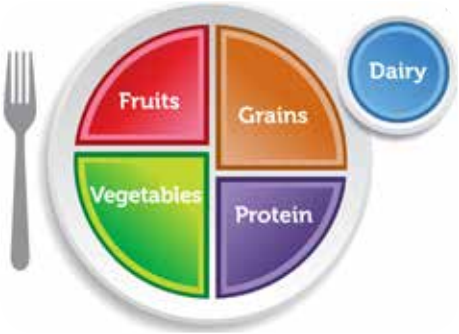
Cafeteria Runner American Museum of Natural History, NY
15 years of service

"I feel more alive due to Better Living. For years I was concerned about my weight and cholesterol and ***I saw my son struggling with the same problems, but I didn't know what to do***.

"I used what I learned in the workshop to cut down on rice and increase my vegetables. My wife and I have started dancing several times a week, something we haven't done in years. Because of Better Living, ***I have lost weight and am feeling great, and my son does too***."

[18] In LA, participants pay $10 per generic and $25 for brand medications and in OC the benefit is $15 for generics and $30 for brand in Kaiser and $10 for generics and $20 for brands in the Health Net plan. By contrast, Chicago participants have access to a list of free prescriptions for chronic conditions, NY participants have access to $1 generic prescriptions ($15 or $30 for brands), and Boston participants can access generics for $4 ($8 or $12 for brands).

While sharing meals, Better Living graduates have the opportunity to share advice on healthy eating habits like the healthy plate.



Barbara Haughton, baker, Citigroup, 3 ½ years of service presenting 30 Day No Soda Challenge calendar to participants.

NY used its Healthcare Committee – worker leaders committed to helping co-workers learn about benefits, navigate the healthcare system, and achieve better health – to promote a "30 Day No Soda Challenge."

It was clear that the people who first committed to Better Living were participants who were more oriented towards improving their health to begin with. The Healthcare Committee wanted a fun activity to help recruit the next set of candidates to Better Living – a "game" that could have the potential of making Better Living more mainstream by giving committee members a tool to set a goal in the workplace and support each other to achieve it. In November 2014, 150 union members in about ten worksites took the challenge along with their managers and staff from the local union. Committee leaders acted as cheerleaders, counting down the days, providing tips and getting successful people to share their victories.

Participants who do not have chronic conditions have found ways to support their co-workers who do. Carlos, a healthcare committee leader in NY traded shifts for six weeks with his co-worker so his co-worker could participate in Better Living. When Sammy, another healthcare committee leader from NY discovered that his co-worker didn't have a monthly unlimited metro card and that the extra $2.50 for the subway ride to Better Living would present a hardship, Sammy traded his unlimited metro card with his co-worker's pay-per-ride card on the day of the Better Living workshops, effectively paying his co-worker's subway fare for the six weeks of Better Living workshops.

In LA/OC, graduates have participated in three 5k walks. They raised funds for entry fees, arranged to travel together to the events and walk as a group.

Dr. Joel Hyatt, Assistant Medical Director of Kaiser Permanente in Southern California

LA/OC graduates have also come together twice for annual celebrations of the Better Living program, along with employers, union staff, UHH staff, and program partners at Kaiser. At the events, graduates share stories and celebrate the results of the program, as any benefits achieved in lower costs ultimately accrue to them.

All of these activities create a community of health with impacts that go far beyond the gains achieved by individuals enrolled in the program. The ripple effects of healthier habits touch families, co-workers, the union, employers and other UHH staff.

Future Program Development

In 2015 we plan to continue refining the model we developed and explore adding a few additional features. In LA/OC we observed that recruitment for Better Living has become more challenging as we exhaust the pool of self-motivated candidates and try to reach participants who are struggling more with their conditions. These candidates are more likely to be in denial about their condition, less optimistic that they can learn to self-manage, and generally have poorer health that may interfere with program attendance. Health Promoters have had to learn to approach these candidates differently and to take more time to recruit. This has slowed the pace of workshops but also means that candidates now entering the workshops have a greater need for the program and a greater potential to benefit from it. Health Promoters have also had to train VLs in this more sophisticated approach and to make sure that the team does not get demoralized by the slower pace of recruitment. As with other aspects of the program, we will apply what we learn in LA/OC to other areas to be better prepared for shifts in the program.

Increasing the number of workshops in all areas remains a goal of Better Living. In 2015 we aim to graduate 650 participants from 45 workshops.

We are particularly excited about developing VLs outside of LA/OC with a goal of developing 50 VLs nationwide by the end of the year. We hope to bring together VLs from different parts of the country to learn from each other, inspire them to continue leading and to deepen their skills, particularly in the area of recruitment.

Finally, we would like to explore two new areas in 2015. First, we would like to work with CareMessage to implement medication reminders and possibly create chat groups of interested participants. CareMessage did a small pilot of a chat group and we found that its participants enjoyed interacting with and motivating each other virtually. Second, we hope to begin emotional support groups in LA/OC. Better Living graduates often admit they suffer from depression as a consequence of living with a chronic condition. Many of our participants are uncomfortable with traditional western talk therapy but may benefit from informal support groups, just as they benefit from the Better Living group setting. The National Alliance on Mental Illness (NAMI) trains support group leaders in a fashion that appears to be similar to the CDSMP model. We plan to explore their model with an eye to implement a behavioral health program to complement our current Better Living program.

Conclusion

The almost 1,000 participants who entered UHH's Better Living program demonstrated the desire among our participants to learn to better self-manage their conditions. Better Living does not rely on clinicians nor the healthcare system but rather utilizes group support and education to help participants learn to change behaviors in order to lead healthier lives. The results of the study reinforce participants' stories of relatively rapid and sustained success in improving health status. We believe that over time the benefits will become even more visible as Better Living graduates help create a community of health in their homes and at their workplaces.

Luis Barrientos

Health Promoter, Chicago
16 years of service

"About three years ago I was at work at the Fund, I started to feel numbness in my right hand and arm, thinking that I might be having a stroke or heart attack. I went to the ***emergency room and was admitted for two days***, having a variety of tests since my numbness would not go away. I was diagnosed with diabetes and was referred to a dietitian but the one day consultation didn't really help me.

"I was taking several pills a day and per my doctor soon will be taking insulin shots if I didn't do something about it. I heard about the Better Living workshops and decided to give it a try. After taking the Better Living workshops something clicked and I was all about living better. I am happy to say that with a lot of work and sticking with the program that as of December 2014 ***I am no longer on any diabetes medication*** and I give credit to the Better Living program where I learned how and what to eat and also the importance of regular exercise.

"My experience was the main reason I applied for the Health Promoter position. I know it works and because of this I am a BIG believer in the program. ***I want other people to benefit from it as much as I have***. "

Appendix I: Chronic Disease Self-Management Program[19]

The Chronic Disease Self-Management Program is a workshop given two and a half hours, once a week, for six weeks, in community settings such as senior centers, churches, libraries and hospitals. People with different chronic health problems attend together. Workshops are facilitated by two trained leaders, one or both of whom are non-health professionals with chronic diseases themselves.

Subjects covered include: 1) techniques to deal with problems such as frustration, fatigue, pain and isolation, 2) appropriate exercise for maintaining and improving strength, flexibility, and endurance, 3) appropriate use of medications, 4) communicating effectively with family, friends, and health professionals, 5) nutrition, and, 6) how to evaluate new treatments.

It is the process in which the program is taught that makes it effective. Classes are highly participative, where mutual support and success build the participants' confidence in their ability to manage their health and maintain active and fulfilling lives.

The Self-Management Program does not conflict with existing programs or treatment. It is designed to enhance regular treatment and disease-specific education such as Better Breathers, cardiac rehabilitation, or diabetes instruction. In addition, many people have more than one chronic condition. The program is especially helpful for these people, as it gives them the skills to coordinate all the things needed to manage their health, as well as to help them keep active in their lives.

The Program was developed by the Division of Family and Community Medicine in the School of Medicine at Stanford University with a five year research grant from the federal Agency for Health Care Research and Policy and the State of California Tobacco-Related Diseases office. The purpose of the research was to develop and evaluate, through a randomized controlled trial, a community-based self-management program that assists people with chronic illness. The study was completed in 1996.

Subjects who took the Program, when compared to those who did not, demonstrated significant improvements in exercise, cognitive symptom management, communication with physicians, self-reported general health, health distress, fatigue, disability, and social/role activities limitations. They also spent fewer days in the hospital, and there was also a trend toward fewer outpatients visits and hospitalizations. These data yield a cost to savings ratio of approximately 1:4. Many of these results persist for as long as three years.

[19] Adapted from the program's description at http://patienteducation.stanford.edu/programs/cdsmp.html.

Appendix II: National Better Living Statistics

Los Angeles, first workshop 2/29/12 **Orange County**, first workshop 9/10/12	**TOTAL**	**2012**	**2013**	**2014**
Workshops completed	55	14	29	12
English	7	2	2	3
Spanish	48	12	27	9
Participants who have entered program	775	201	404	170
Graduates (completed at least 4 of 6 workshops)	667	179	349	139
Graduation rate	86%	89%	86%	82%
% of workshop participants with perfect attendance	46%			38%
% Graduates who graduated >12 months ago who have attended				
9-12 monthly meetings	11%			
4-8 monthly meetings	19%			
1-3 monthly meetings	38%			
0 monthly meetings	32%			
Graduates who have received Rx reimbursement	67			
Enrolled in Texting Program	99(15%)			
Active volunteer leaders		6	12	16
Active volunteer leaders trained to lead workshops		5	10	8
Staff trained to lead workshops		4	3	3
Full time staff equivalents		2	3	2.5

Chicago, first workshop 7/10/13	**TOTAL**	**2013**	**2014**
Workshops completed	10	2	8
English	5	1	4
Spanish	5	1	4
Participants who have entered program	112	16	96
Graduates (completed at least 4 of 6 workshops)	93	8	85
Graduation rate	83%	50%	89%
Enrolled in Texting Program	28 (30%)		
Staff trained to lead workshops		2	2
Full time staff equivalents		0.1	1.5

Food Service, first workshop 4/6/13	**TOTAL**	**2013**	**2014**
Workshops completed	4	2	2
English	3	1	2
Spanish	1	1	0
Participants who have entered program	40	20	20
Graduates (completed at least 4 of 6 workshops)	33	16	17
Graduation rate	83%	80%	85%
Enrolled in texting program	17 (42%)		
Staff trained to lead workshops		0	1
Full time staff equivalents		1	1

New York, first workshop 8/5/14	**2014**
Workshops completed	4
English	2
Spanish	2
Participants who have entered program	70
Graduates (completed at least 4 of 6 workshops)	58
Graduation rate	83%
Enrolled in texting program	21 (30%)
Staff trained to lead workshops	1
Full time staff equivalents	1

UHH GRAND TOTAL	**TOTAL**	**2012**	**2013**	**2014**
Workshops completed	**73**	14	33	26
English	**17**	2	4	11
Spanish	**56**	12	29	15
Participants who have entered program	**997**	201	440	356
Graduates (completed at least 4 of 6 workshops)	**851**	179	373	299
Graduation rate	**85%**	89%	85%	84%
Enrolled in texting program	**165 (19%)**			
Staff trained to lead workshops	**7**	4	6	7
Full time staff equivalents	**6**	2	4.1	6

Appendix III: UNITE HERE HEALTH

UNITE HERE is a union that represents about 200,000 hospitality workers in hotels, stadiums, casinos, airports and cafeterias in the U.S. and Canada. The union's health plan, UNITE HERE HEALTH (UHH), is a Taft-Hartley Fund[20] dedicated to providing healthcare for hospitality workers and their families. Nationally, UHH covers over 220,000 lives in places like Las Vegas, Atlantic City, New York, Chicago, Boston, Monterey and Los Angeles. In some regions, UHH directly offers health services; in others, UHH contracts with a limited network of providers; and in some, UHH contracts with health plans. In each of these, UHH has undertaken innovative efforts to provide high quality health care that results in better outcomes for its participants at an affordable cost to them with better service than is otherwise available in the market and that lowers costs to UHH.

The members of UNITE HERE have prioritized quality, affordable health benefits when they bargain their contracts with employers. Since the average annual income for a hospitality worker is under $30,000, the union has worked hard to keep co-insurance to about $25-$60 per month and copays for services like office visits and prescription drugs in the $15-$20 range. Amounts higher than this result in members opting out of coverage or failing to get timely care, dynamics that ultimately increase the cost of care and adversely affect the health of the member. Coverage typically includes family coverage at little or no extra cost to the member as members are often the sole providers of healthcare for their families. UHH pays an average of around $900 per member per month, with amounts varying significantly by geographic region.

The current cost of healthcare is unsustainable. The simple fact is that every dollar UHH spends on healthcare is a dollar that could have gone to a worker in wages, wages that would help lift hospitality workers out of poverty and likely do more for their health than increasing spending on their healthcare. UHH believes its challenge is to radically bend the cost curve while maintaining quality coverage.

[20] A non-profit organization jointly governed by labor and management trustees.

Appendix IV: UNITE HERE HEALTH Better Living, Los Angeles and Orange County, Final Evaluation Report, January 2015

Report prepared by Zina Kally, PhD, Director, Research & Evaluation, Partners in Care Foundation, 732 Mott St., Suite 150, San Fernando, CA 91340

INTRODUCTION

In March 2012, UNITE HERE HEALTH (UHH) began a pilot project offering Chronic Disease Self-Management Program (CDSMP)[21] workshops to its participants in Los Angeles and Orange County. UHH is a Taft-Hartley Fund that provides healthcare coverage to members of UNITE HERE International Union representing hospitality workers at hotels, stadiums, casinos, airports, and cafeterias in the U.S. and Canada.

The CDSMP program consists of a series of six small-group workshops, two and a half hours each, offered once a week. People with different chronic health problems attend together. Workshops are facilitated by two trained leaders, often laypeople with chronic conditions themselves. Subjects covered in the workshops include: 1) techniques to deal with problems such as frustration, fatigue, pain and isolation, 2) appropriate exercise for maintaining and improving strength, flexibility, and endurance, 3) appropriate use of medications, 4) communicating effectively with family, friends, and health professionals, 5) nutrition, and, 6) how to evaluate new treatments.

CDSMP has demonstrated significant improvements in participant outcomes, such as self-reported health, depression, shortness of breath, fatigue, pain, self-efficacy, exercise, relaxation, mental stress management, communication with physician, utilization, just to name a few, in a large number of evaluations, including a randomized controlled trial.[22] One of the most recent studies found the program to be effective at addressing the Triple Aim goals of better health, better health care, and better value (measured by health care utilization).[23]

The current evaluation study was designed to evaluate whether the program would produce the same outcomes for an ethnically diverse and younger population of UNITE HERE HEALTH participants. This report presents the final results of the evaluation. The evaluation was carried out by Partners in Care Foundation and funded by a grant from the California Health Care Foundation.

---

[21] CDSMP was developed by the Division of Family and Community Medicine in the School of Medicine at Stanford University with a five year research grant from the federal Agency for Health Care Research and Quality and the State of California Tobacco-Related Diseases office. For more information, please see http://patienteducation.stanford.edu/programs/cdsmp.html.

[22] For a detailed overview of different evaluation studies, please see http://patienteducation.stanford.edu/research/Review_Findings_CDSMP_Outcomes1%208%2008.pdf.

[23] Ory, M. G., Ahn, S., Jiang, L., Smith, M. L., Ritter, P., Whitelaw, N., & Lorig, K. (2013). Successes of a national study of the Chronic Disease Self-Management Program: Meeting the triple aim of health care reform. *Medical Care, 51*(11), 992-998.

IMPLEMENTATION OF CDSMP AT UHH

The first CDSMP workshop offered by UHH took place in February 2012. To date, 55 workshops have been completed, 48 in Spanish and 7 in English. The workshops have been held primarily at the UNITE HERE HEALTH regional offices in LA and OC on times and days convenient to the participants.

Prior to January 2013, the workshops were led primarily by Kaiser Permanente staff (Table 1). Starting in January 2013, workshops have been led primarily by trained leaders from UHH, including UHH staff and UHH members who volunteer to be workshop leaders (Table 1). Peer-leaders act as positive role models increasing the effectiveness of the program. Workshop size averages at 14 participants.

Table 1. Workshop leaders (2 leaders per workshop)

Year	Kaiser	UHH	Volunteer Leaders
2012	21	3	4
2013	9	21	28
2014	3	11	10

A number of innovations have been introduced by UHH to complement the CDSMP program. After "graduation," participants are offered monthly group meetings for continuing support and education. The meetings consist of one hour of support group activities and one hour of continuing education; cooking demonstrations and raffle prizes are offered to enliven these monthly meetings.

Participants who have completed the initial CDSMP program and attended six monthly meetings become eligible for up to $100 in monthly reimbursements for copays on their maintenance medications for as long as they continue attending monthly meetings.

Starting in December 2013, graduates of CDSMP workshops in Los Angeles and Orange County have been offered a chance to enroll in a texting program that incorporates reminders about monthly meetings and three to five text messages per week focused on helping the participants with chronic conditions to sustain the behavior change that is reported during the program. Due to the late start of the program, participation in texting could not be included in the evaluation analyses.

OVERVIEW OF THE EVALUATION

The evaluation used a combination of measures and data sources to assess the effectiveness of the program.

MEASURES

Self-report questionnaire

Description: A self-report questionnaire (Appendices A and B) was used to assess self-reported days missed from work, changes to eating behavior, participants' level of depression (PHQ-8), self-rated health, problems with pain and breathing, level of physical activity, influence of health on daily activities, and ability to properly communicate with the physician. The scales and questions included in

the survey were chosen in collaboration with the CDSMP program leaders at Stanford University and were provided by the Stanford Patient Education Research Center.[24]

Depression is measured using the PHQ-8[25], an 8-item depression scale of the Patient Health Questionnaire. Respondents are asked to indicate how much a particular problem, such as "Feeling down, depressed, or hopeless", bothered them in the previous two weeks and the answers are scored on a 4-point scale: 0 'not at all,' 1 'several days,' 2 'more than half the days,' and 3 ' nearly every day'. The total score is obtained by summing the answers on all 8 items. No missing answers are allowed. Scores of 1-4 indicate minimal depression, 5-9 - mild depression, 10-14 - moderate depression, 15-19 - moderately-severe depression, and 20-27 - severe depression.

Self-rated health is measured by asking respondents if they would say their health, in general, is excellent (1), very good (2), good (3), fair (4), or poor (5). The item was borrowed from the National Health Interview Survey.

Pain: participants are asked to circle the number between 1-10 that best describes their pain in the past 2 weeks, with 0 being no pain and 10 being severe pain. The score is the number circled, with the higher score indicating more pain.

Shortness of breath: participants are asked to circle the number between 1-10 that best describes their shortness of breath in the past 2 weeks, with 0 indicating no shortness of breath and 10 indicating severe shortness of breath. The score is the number circled, with the higher score indicating more shortness of breath.

Participants' level of *physical activity* is assessed using a scale that measures exercise behaviors. Participants are asked to indicate, on a scale, how much time they spent during the past week on different types of exercise. The answers are then converted to minutes. Two measures are obtained: time spent in stretching or strengthening and time spent in aerobic exercise.

To evaluate *how much health interferes with activities of daily living*, the Social/Role Activities Limitations scale, adopted from the Medical Outcome Study, is used. It measures how much health interferes with normal social activities (item 1), hobbies or recreational activities (item 2), household chores (item 3), and errands and shopping (item 4) on a 5-point scale – 0 'not at all', 1 'slightly', 2 'moderately', 3 'quite a bit', and 4 'almost totally'. The total score is the mean of four items. The higher score indicates greater activities limitations.

Communication with physicians is measured using a three-item scale that asks participants, when they visit their doctor, how often they prepare a list of questions for their doctor (item 1), ask questions about the things they want to know and things they don't understand about their treatment (item 2), and discuss any personal problems that may be related to their illness (item 3). The answers are scored on a 6-point scale - 0 'never', 1 'almost never', 2 'sometimes', 3 'fairly often', 4 'very often', and 5 'always'. The final score is the mean of the three items. The higher score indicates better communication with physicians.

[24] All scales are available at http://patienteducation.stanford.edu/research/.
[25] Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity Measure. Psychiatric Annals, *32* (9): 509-521. (Includes information on PHQ-8.)

Administration: The questionnaire is administered to program participants prior to program enrollment (baseline), upon program completion (upon completion of the 6 workshops), 6 months after enrollment (notated as 6-mo F/U in tables in the report), 12 months after enrollment (notated as 12-mo F/U in tables in the report), and 24 months after enrollment. The questionnaire is administered in person, by mail, and occasionally over the phone, by UHH staff and volunteer leaders.

Returned questionnaires: Of the 725 participants who have gone through the program through September 2014, 686[26] unique participants returned at least one of the questionnaires:

- 624[6] filled out the questionnaire at baseline
- 480 filled out the questionnaire upon program completion[27]
- 291 (48% of the 601 respondents who were eligible for a 6 month follow-up) filled out the questionnaire at 6 months post enrollment
- 205 (44% of the 471 respondents who were eligible for a 12 month follow-up) filled out the questionnaire at 12 months post enrollment
- 13 (15% of the 85 respondents who were eligible for a 24 month follow-up) filled out the questionnaire at 24 months post enrollment.

Participants who returned a questionnaire upon program completion, at 6-month follow-up, and at 12-month follow-up were compared to the participants who did not return a questionnaire at the same time points on gender, age, ethnicity (Hispanic/non-Hispanic), and education. There were no statistically significant differences between those who returned a questionnaire upon program completion and those who did not return a questionnaire upon program completion. At 6-month follow-up, there was one statistically significant difference – 6% of those who returned a 6-month questionnaire were non-Hispanic compared to 14% of those who did not return a 6-month questionnaire (Chi-square=11.16, p=.001). There were no statistically significant differences between those who returned a 12-month questionnaire and those who did not.

Participant biometric information

Description: For the participants who signed a HIPAA release form (419 (66%) of the 634 participants who were Kaiser Permanente members[28]) allowing Kaiser Permanente to share their bio-metric data with the program evaluators, the evaluation has analyzed the changes in Hemoglobin A1C, blood pressure, cholesterol, and BMI between baseline and 6-12 months after program enrollment. Analyses were limited only to participants who were out of control on each particular measure at baseline (except for LDL, for which analyses for all participants were included as well). Table 6 lists the out of control criteria used.

For baseline measures, the tests closest to the date of enrollment in CDSMP were used among the tests performed 6 months prior to the date of enrollment. For the follow-up measures, the tests furthest away from the date of enrollment in CDSMP were used among the tests performed 6-12 months after enrollment.

[26] The questionnaire was introduced after the program started and was not administered at baseline or upon program completion to the participants of the first six workshops.
[27] Lower than the number of participants who have graduated due to some participants missing questionnaires.
[28] The rest of the CDSMP program participants were primarily Health Net members – no utilization or bio-metric data were available for those members. Of the 634 Kaiser Permanente members, 53 participants could not be located in Kaiser medical record system .

Participant utilization information

For participants who are members of Kaiser Permanente, emergency room (ER) and inpatient (IP) utilization data were obtained. The goal was to analyze the changes in the number of ER and IP visits and total length of stay 12 months prior to class enrollment (baseline) to the number of ER and IP visits and total length of stay 12 months after graduation (follow-up). IP utilization excluded maternity, mental health, and skilled nursing facility stays. Since the utilization data provided by Kaiser Permanente covered utilization through the end of July 2014, the utilization analyses were limited to 353 Kaiser participants who graduated from the program by July 2013 (July inclusive; to allow for 12 months of utilization after graduation).

STATISTICAL ANALYSIS

To analyze the changes between different time points on the self-report measures, separate analyses have been run comparing

1. Baseline and upon program completion
2. Baseline and 6 months post enrollment
3. Baseline and 12 months post enrollment

For continuous variables, a paired-samples t-test was used. For categorical variables, McNemar's chi-square test was used. Since both tests require that baseline and follow-up measures are obtained from the same participants, the sample used for each comparison varies, due to variability in missing data (i.e. a participant who has a measure at baseline and 6 month follow-up, but not upon program completion and 12 month follow-up, is only included in the comparison between baseline and 6 months post enrollment; a participant who has a measure at baseline and 12 month follow-up, but not the other two follow-up measures, is only included in the comparison between baseline and 12 month follow-up; etc.).

The biometric and utilization data were analyzed using a paired-samples t-test.

In addition, the self-reported and some of the biometric measures were also analyzed using a repeated measures ANOVA comparing participants who attended monthly meetings to participants who did not.

For the self-report questionnaire, for the baseline to 6-month post enrollment comparison, two types of analyses were performed: 1. the outcomes for participants who did not attend any monthly meetings were compared to the outcomes of participants who attended at least 1 of the first 4 monthly meetings after graduation; 2. the outcomes for participants who did not attend any monthly meetings were compared to the outcomes of participants who attended 1-2 and 3-4 of the first 4 monthly meetings after graduation.

For the baseline to 12-month post enrollment comparison on the self-reported measures, the following two types of analyses were performed: 1. the outcomes for participants who did not attend any monthly meetings were compared to the outcomes of participants who attended at least 1 of the first 10 monthly meetings after graduation; 2. the outcomes for participants who did not attend any monthly meetings were compared to the outcomes of participants who attended 1-5 and 6-10 of the first 10 monthly meetings after graduation.

To analyze the effect of monthly meeting attendance on bio-metric measures, the proportion of meetings attended out of available meetings prior to when the follow-up measure was taken was first calculated, and then participants were grouped into the following categories - "0 meetings attended", "0-50% meetings attended", and "greater than 50% of the meetings attended" to use for the repeated measures ANOVA. For example, if a participant's follow-up BMI measure was taken 5 months after graduation, the participant had a chance to attend 5 monthly meetings after they graduated and before the BMI measure was taken. If the participant attended only 2 of the 5 meetings, then this participant will fall under the "0-50% meetings attended" category, because 2/5=.4 (i.e. the participant attended 40% of the meetings available to him/her after graduation and before the follow-up BMI measure was taken). These analyses were performed for BMI, LDL, and Hemoglobin A1C, since these three measures had the largest sample sizes.

Repeated measures analyses compare whether the pattern of change from baseline to follow-up differs between the groups being compared; it does not analyze whether the groups are statistically different at baseline or follow-up.

Due to some changes that had to be made to the depression and shortness of breath scales at the end of 2012, the samples for these two measures are somewhat smaller than the samples available for the rest of the self-report questionnaire measures.

Due to rounding, the numbers presented in graphs and tables below might add up to 99% or 101% in place of 100% (where applicable).

DEMOGRAPHICS and DIAGNOSES

Of the 686 unique participants included in this report:

- 86% (592 participants) completed CDSMP in Spanish and 14% (94 participants) completed CDSMP in English.
- 60% were women and 40% were men.
- 73% were between the ages of 46-65 upon enrollment, with the mean age of 53 (SD=10.6 years).
- 77% have only a high school diploma or less education.
- 91% were of Hispanic origin.

On average, participants had two chronic conditions. Thirty-one percent reported having only one chronic condition; 24% reported having two chronic conditions; 20% reported having 3 chronic conditions; and 11% reported 4-6 chronic conditions (14% are missing information on chronic conditions) (Figure 1).

Most common chronic conditions were high cholesterol (reported by 48%), high blood pressure (43%), diabetes (41%), and arthritis (18%) (Figure 2).

Figure 1. Participants by # Chronic Conditions (CC)

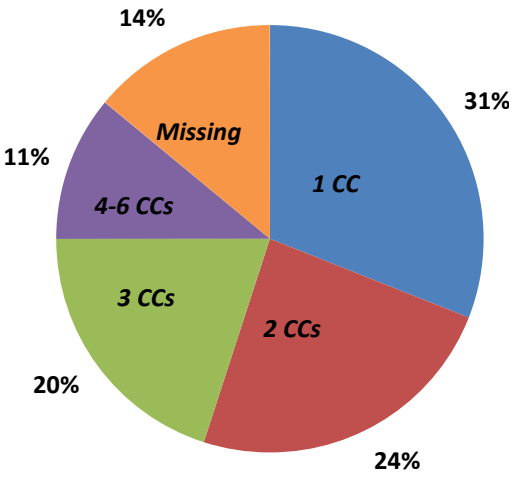
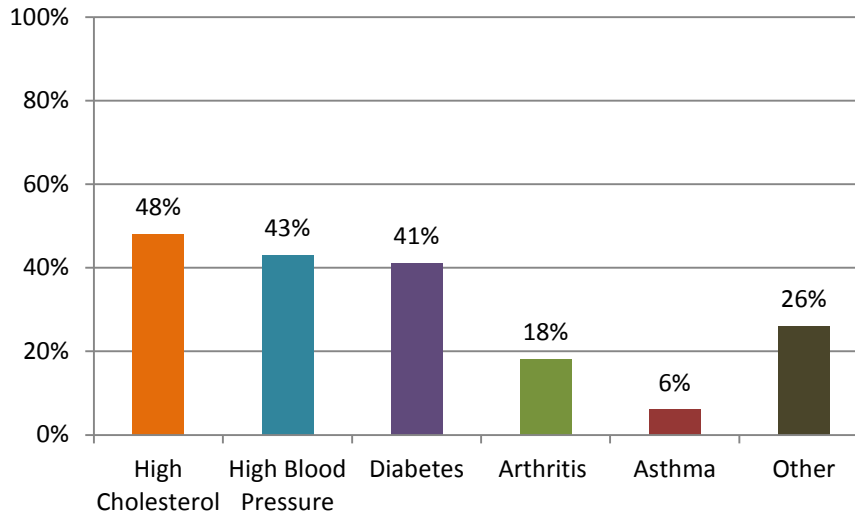


Figure 2. Most Common Chronic Conditions (N=686)



OUTCOMES

Overall Health

Upon program enrollment, 68% of the participants reported being in fair or poor health and only 32% of the participants reported being in good, very good, or excellent health (Figure 3). Upon program completion, only 40% of the same participants reported being in fair or poor health and 60% reported being in good, very good, or excellent health (Figure 3). The results are statistically significant (McNemar's Chi-square=123.69, $p<.001$).

Very similar results were obtained from the comparison of baseline and 6 month-follow-up (Figure 4). The results are statistically significant (McNemar's Chi-square =55.12, $p<.001$).

For the participants who returned a 12-month questionnaire, 69% reported being in fair or poor health at baseline, but only 37% reported being in fair or poor health at 12-month follow-up with 63% reporting being in good, very good, or excellent health (Figure 5). These results are statistically significant as well (McNemar's Chi-square =40.52 $p<.001$).

Figure 3. Overall Health
(N=457)

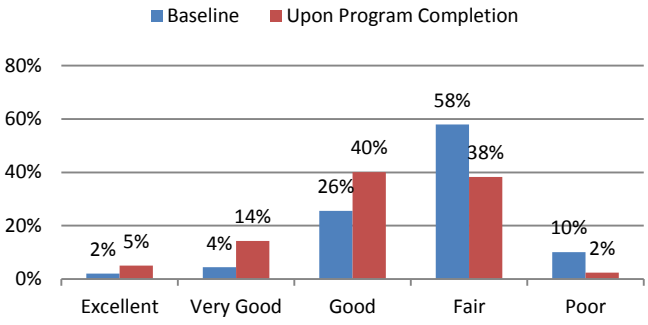


Figure 4. Overall Health: 6 month follow-up
(N=236)

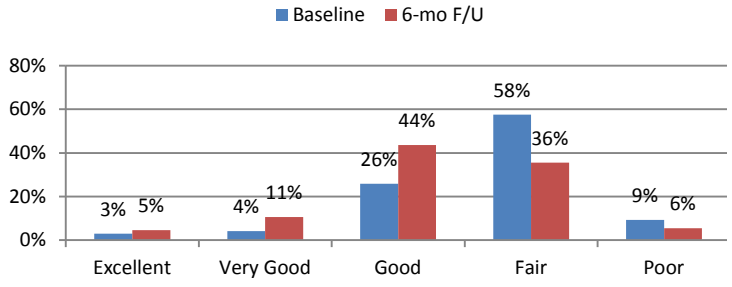
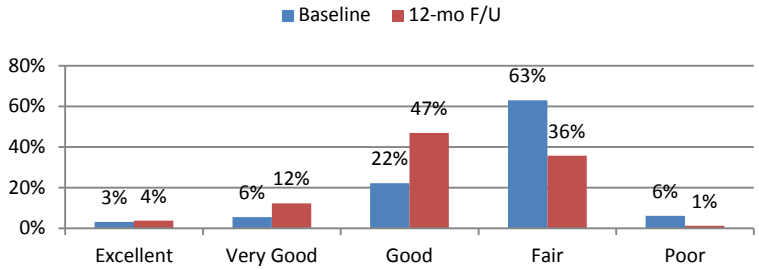


Figure 5. Overall Health: 12 month follow-up
(N=162)



Days Missed from Work in Previous Month

Upon program enrollment, participants reported missing, on average, 1.4 days from work in the previous month (Table 2). Upon program completion, the same participants reported missing fewer days from work in the previous month - 0.9 days on average (Table 2). The difference is statistically significant (Table 2).

Even though it is not statistically significant, the same pattern is observed when comparing days missed from work between baseline and 6-month follow-up and baseline and 12-month follow-up (Table 2).

Table 2. Days missed from work

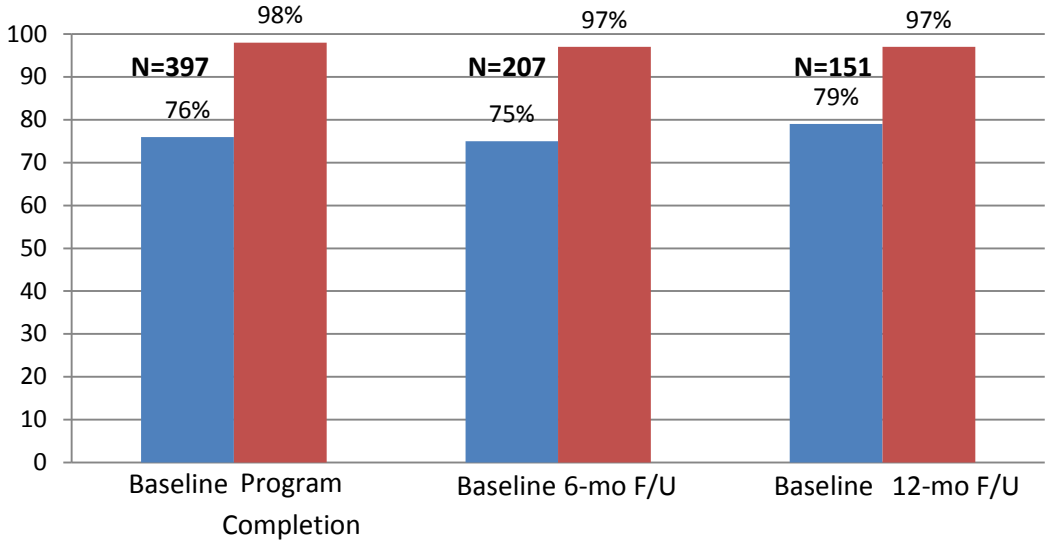
Data Collection	N[a]	Mean	SD	t-test	Statistical significance.
Baseline Upon Program Completion	351	1.4 0.9	5.2 4.3	2.1	0.036*
Baseline 6-mo F/U	181	1.4 0.7	5.3 3.6	1.8	0.072
Baseline 12-mo F/U	133	1.9 1.2	6.4 5.7	1.2	0.222

[a] Question did not apply to all participants, as some participants in the program were non-working spouses and people on disability. If a participant on disability answered the question, however, they were included in the analysis. Participants who reported missing one month or more were coded as missing 30 days.

Changing Eating Behavior

Even though upon program enrollment already a high percentage (76%) of the participants reported that they had taken steps to change the way they eat since they found out that they had a chronic condition, the percentage increased to 98% after program completion (Figure 6). The increase is statistically significant (t(396)=-10.338, $p<.001$). The same pattern is observed for the comparison of baseline and 6-month follow-up data (t(206)=-6.992, $p<.001$) and the comparison of baseline and 12-month follow-up data (t(150)=-4.615, $p<.001$) (Figure 6).

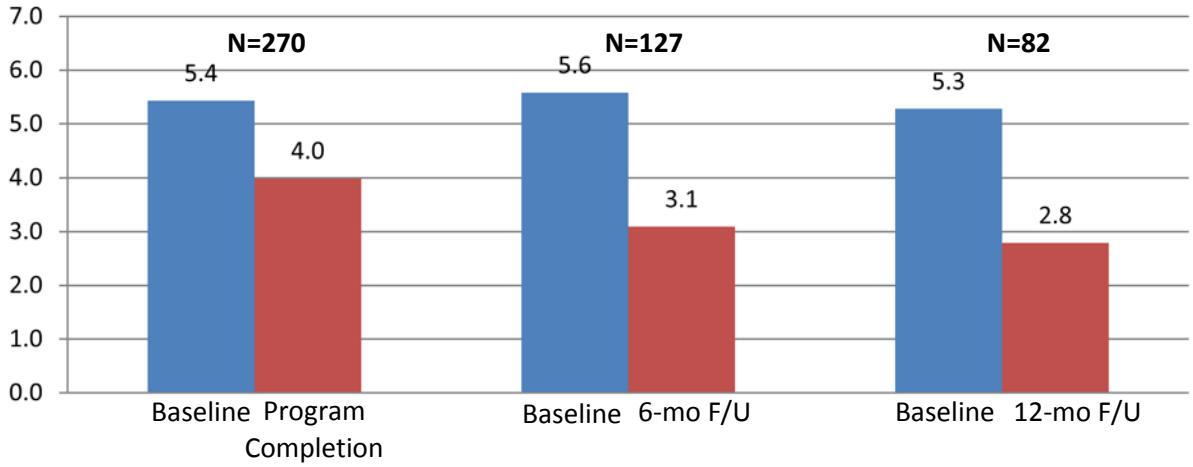
Figure 6. Percent of participants who reported changing the way they eat.



Depression

Upon enrollment, participants, on average, scored in the mild depression range and the score decreased to minimal depression upon program completion, at 6-month follow-up, and at 12-month follow-up (Figure 7). The results are statistically significant for all three comparisons (t(269)=4.746 $p<.001$, for the comparison of baseline and upon program completion; t(126)=6.013, $p<.001$, for the comparison of baseline and 6-month follow-up; t(81)=4.816, $p<.001$, for the comparison of baseline and 12-month follow-up).

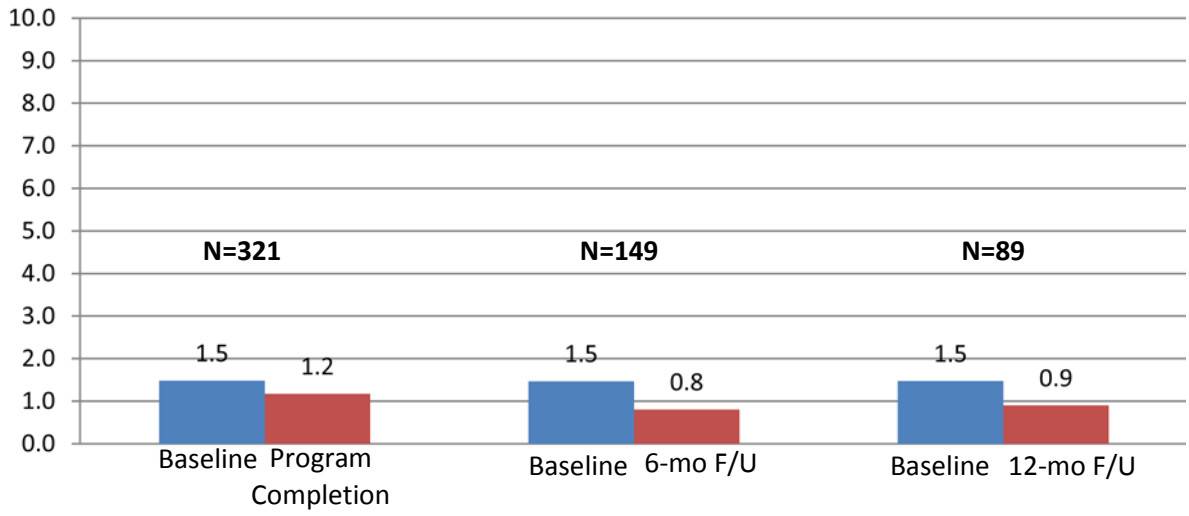
Figure 7. Depression



Shortness of Breath

Participants, overall, do not report much shortness of breath upon enrollment (Figure 8). On average, participants who returned the questionnaires at both baseline and upon program completion scored their shortness of breath at baseline at 1.5 on a 10-point scale (Figure 8). Despite the already low baseline score, the score further decreased to 1.2 by the end of the program (Figure 8) and the change is statistically significant (t(320)=2.014, $p=0.045$)).

Figure 8. Shortness of Breath

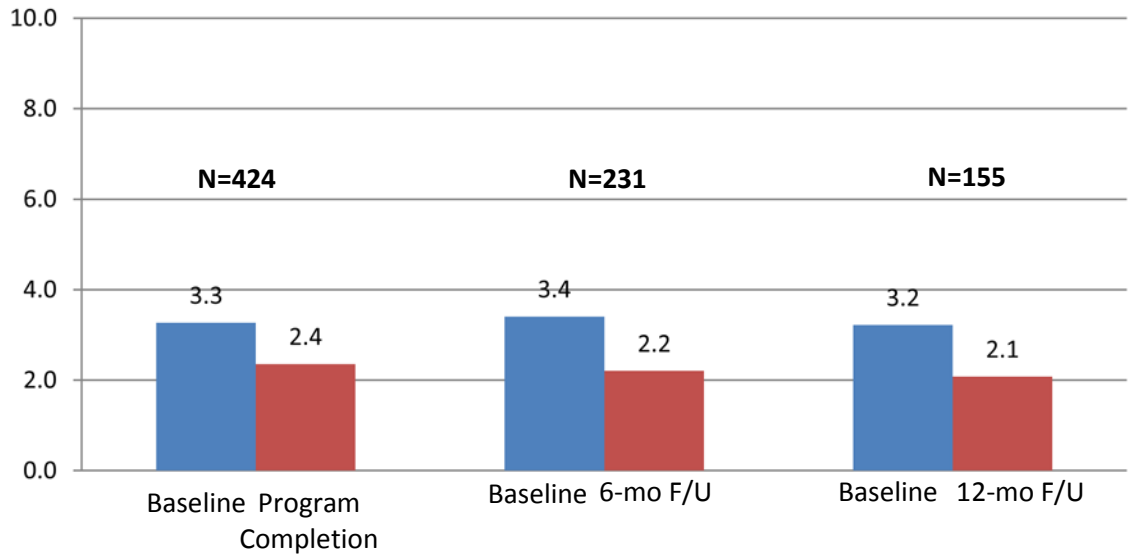


For participants who returned both the baseline and 6 month questionnaires and the baseline and 12-month questionnaires, the change was even more pronounced – the score decreased from 1.5 at baseline to 0.8 at 6-month follow-up (Figure 8; the change is statistically significant (t(148)=2.903, *p*=.004), and from 1.5 at baseline to 0.9 at 12-month follow-up (Figure 8), but the change is not statistically significant (t(88)=1.756, *p*=.083).

Pain

Participants, overall, did not report high levels of pain upon enrollment (Figure 9). The average rating of pain at baseline ranged between 3.2 - 3.4 on a 10-point scale for all three comparison samples (Figure 9). At follow-up, the score ranged between 2.1- 2.4(Figure 9). The differences for all three comparisons were statistically significant (t(423)=5.447 *p*<.001, for the comparison of baseline and upon program completion; t(230)=4.878, *p*<.001, for the comparison of baseline and 6 month follow-up; t(254)=4.342, *p*<.001, for the comparison of baseline and 12 month follow-up).

Figure 9. Pain



Time Spent on Exercise per Week

On average, at baseline, participants reported spending 19 minutes in stretching and strengthening and 63 minutes on aerobic activities (Table 3). By the time they completed the program, the average time spent in stretching and strengthening increased to 34 minutes and the average time spent on aerobic activities increased to 89 minutes. The differences are statistically significant (Table 3).

For stretching and strengthening, the results were similar for the comparison of baseline and 6-month follow-up and for the comparison of baseline and 12-month follow-up (Table 3). For aerobic activities, the time spent on aerobic activity increased from 64 minutes at baseline to only 71 minutes at 6-month follow-up and the increase was not statistically significant (Table 3). At 12-month follow-up, however, the time spent on aerobic activities increased from 61 minutes at baseline to 84 minutes at follow-up and the difference is statistically significant (Table 3).

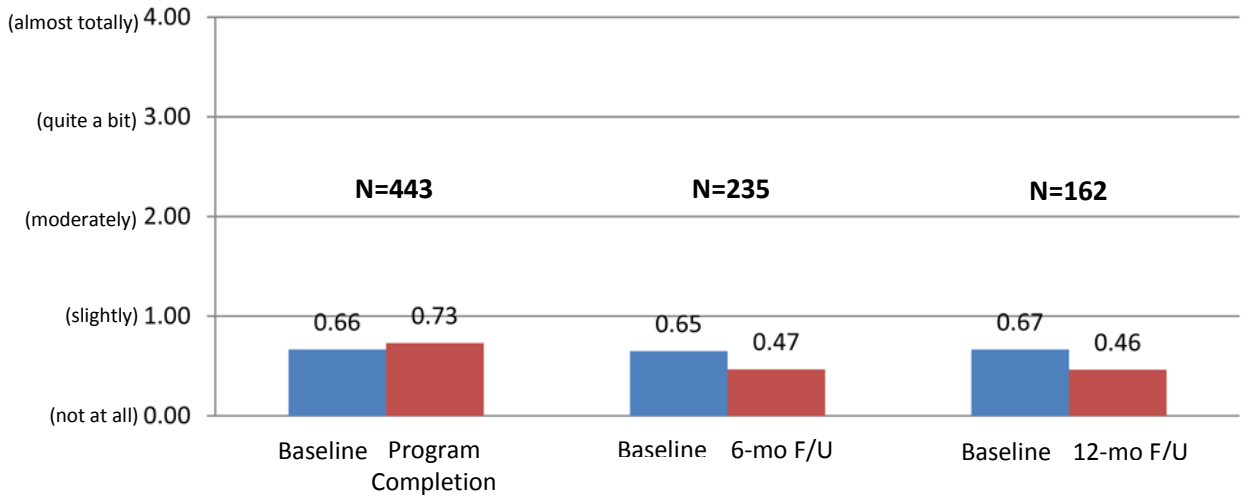
Table 3. Time Spent on Exercise per Week									
Measure	**Baseline**	**Upon Program Completion**	**t-test, statistical significance**	**Baseline**	**6-mo F/U**	**t-test, statistical significance**	**Baseline**	**12-mo F/U**	**t-test, statistical significance**
	N=433			**N=228**			**N=154**		
Average time spent per week on stretching or strengthening exercises (minutes)	19 (SD=34)	34 (SD=38)	t(432)=-7.167 p<.001***	21 (SD=36)	27 (SD=35)	t(227)=-2.27 p=.024*	22 (SD=34)	31 (SD=45)	t(153)=-2.245 p=.026*
	n=448			**N=237**			**N=163**		
Average time spent per week on aerobic activity (minutes)	63 (SD=83)	89 (SD=92)	t (447)=-5.694 p<.001***	64 (SD=85)	71 (SD=82)	t(236)=-1.168 p=.244	61 (SD=78)	84 (SD=95)	t(162)=-2.861 p=.005**

* Statistically significant at .05 level
** Statistically significant at .01 level
*** Statistically significant at .001 level

Health Interfering with Daily Activities

Participants, on average, reported that their health either did not interfere with their daily activities or interfered only slightly (average scores between 0 and 1, Figure 10). Despite the low baseline score, the follow-up scores further decreased at 6 months and 12 months (Figure 10) and the decrease is statistically significant for both time points (t(234)=2.570, *p*=.011 and t(161)=2.539, *p*=.012 respectively).

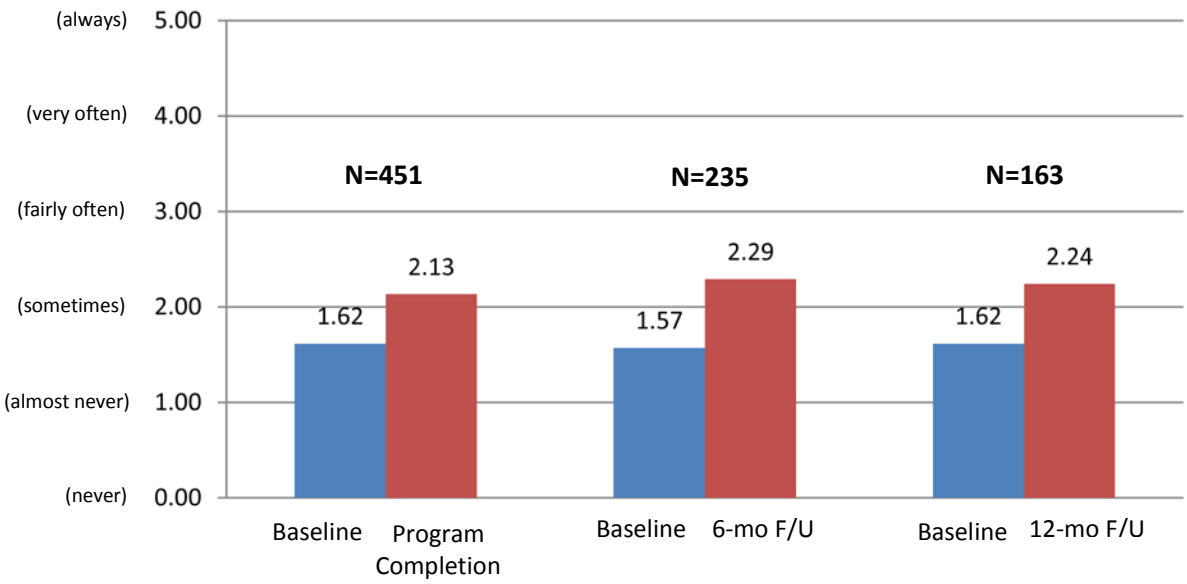
Figure 10. Health Interferes with Daily Activities



Communication with the Doctor

At baseline, participants, on average, almost never or only sometimes prepared a list of questions for their doctor, asked questions about things they wanted to know or things they didn't understand, or discussed personal problems that might relate to their illness with their doctor (scores between 1 and 2, Figure 11). The average score increased to between sometimes and fairly often for all follow-up measures (Figure 11) and the increase is statistically significant for all three comparisons (t(450)=-7.749 $p<.001$, for the comparison of baseline and upon program completion; t(234)=-7.248, $p<.001$, for the comparison of baseline and 6 month follow-up; t(163)=-5.306, $p<.001$, for the comparison of baseline and 12 month follow-up).

Figure 11. Communicating with the Doctor



IP Utilization

Of the 353 Kaiser Permanente members who completed the program through July 2013, only 8 participants had at least one IP visit at baseline and only 5 participants had at least one IP visit at follow-up, for an average of 30 IP visits and 90 bed days per 1,000 at baseline and 10 visits and 50 bed days per 1,000 at follow-up (Table 4). The differences between baseline and follow-up are not statistically significant (Table 4).

Table 4. IP Utilization (N=353)

Time Frame	Mean	SD	Min - Max	t-test, statistical significance
IP Visits				
One year prior to program enrollment	0.03	0.21	0 - 3	t(352)=1.292 p=0.197
One year after program completion	0.01	0.12	0 - 1	
Total Length of Stay (Days)				
One year prior to program enrollment	0.09	0.73	0 - 10	t(352)=0.714 p=0.476
One year after program completion	0.05	0.66	0 - 12	

ER Utilization

Of the 353 Kaiser Permanente members who completed the program through July 2013, only 33 participants had at least one ER visit at baseline and 31 participants had at least one ER visit at follow-up, for an average of 130 ER visits per 1,000 at baseline and 120 ER visits per 1,000 at follow-up (Table 5). The difference between baseline and follow-up is not statistically significant, however (Table 5).

Table 5. ER Visits (N=353)

Time Frame	Mean	SD	Min - Max	t-test, statistical significance
One year prior to program enrollment	0.13	0.48	0 - 4	t(352)=0.497 p=0.620
One year after program completion	0.12	0.48	0 - 6	

Biometrics

To analyze the impact of the program on BMI, LDL cholesterol, Hemoglobin A1C, and blood pressure, analyses were limited only to participants who were out of control on each particular measure at baseline (except for LDL, for which analyses for all participants were included as well). The criteria that were used to identify participants as out of control are listed in Table 6. The baseline measures included the tests performed closest to the date of enrollment in CDSMP among the tests performed 6 months prior to the date of enrollment. For the follow-up measures, the tests furthest away from the date of enrollment in CDSMP were used among the tests performed 6-12 months after enrollment.

For the 114 participants with BMI >=30, the average BMI decreased from 35.3 at baseline to 34.5 at follow-up, and the decrease is statistically significant (Table 6). Twelve (11%) of the 114 participants reduced their BMI to <30 at follow-up.

The average LDL level for all participants (for whom data were available) decreased from 107 at baseline to 97 at follow-up, and the decline was statistically significant (Table 6).

For the 32 participants with an LDL >=130 at baseline, the average LDL levels decreased from 165 at baseline to 119 at follow-up, and the decrease is statistically significant (Table 6). Eighteen (56%) of the 32 participants reduced their LDL to <130 at follow-up.

Two different out of control criteria were used to analyze changes in Hemoglobin A1C: A1C>=8 and A1C>=9 (Table 6).

For the 42 participants with an A1C>=8 at baseline, the average A1C decreased from 9.74 at baseline to 8.96 at follow-up, and the decrease is statistically significant (Table 6). Twelve (29%) of the 42 participants decreased their A1C to <8 by follow-up.

For the 26 participants with an A1C >=9 at baseline, the average A1C decreased from 10.58 at baseline to 9.47 at follow-up, and the decrease is statistically significant (Table 6). Ten (39%) of the 26 participants reduced their A1C to <9 by follow-up.

For the 22 participants with systolic blood pressure >=140 at baseline, the average systolic blood pressure decreased from 152 at baseline to 139 at follow-up, and the decrease is statistically significant (Table 6). Thirteen (59%) of the 22 participants reduced their blood pressure to <140 at follow-up.

For the 15 participants with diastolic blood pressure >=90 at baseline, the average diastolic blood pressure decreased from 97 at baseline to 84 at follow-up, and the decrease is statistically significant (Table 6). Ten (67%) of the 15 participants reduced their diastolic blood pressure to <90 by follow-up.

Table 6. Biometrics

Measure	Out of control criteria	Baseline	6-12 mo F/U	t-test, statistical significance
BMI (N=114)	BMI>=30	35.3 (SD=4.5)	34.5 (SD=5.0)	t(113)=4.29 p<.001***
LDL (N=115)	No criteria used	107 (SD=45)	97 (SD=32)	t(114)=2.93 p=.004**
LDL (N=32)	LDL >=130	165 (SD=35)	119 (SD=36)	t(31)=6.58 p<.001***
Hemoglobin A1C (N=42)	A1C >=8	9.74 (SD=1.55)	8.96 (SD=1.48)	t(41)=3.13 p=.003**
Hemoglobin A1C (N=26)	A1C >=9	10.58 (SD=1.40)	9.47 (1.48)	t(25)=3.12 p=.005**
Systolic BP (N=22)	Systolic BP >=140	152 (SD=12)	139 (SD=19)	t(21)=3.21 p=.004**
Diastolic BP (N=15)	Diastolic BP>=90	97 (SD=7)	84 (SD=11)	t(14)=4.59 p<.001***

** Statistically significant at .01 level
*** Statistically significant at .001 level

Outcomes by Monthly Meeting Attendance

A repeated measures ANOVA did not show any statistically significant differences in the changes from baseline to follow-up on reported health, days missed from work, changing eating behavior, depression, shortness of breath, pain, exercise, health interfering with daily activities, BMI, LDL, and Hemoglobin A1C between participants who attended monthly meetings after graduation and those who did not (Appendix C, Table 1). There was a statistically significant difference between the changes from baseline to 12-month follow-up for the participants who attended no monthly meetings, participants who attended 1-5 monthly meetings, and participants who attended 6-10 monthly meetings on communicating with the doctor: both groups of participants who attended monthly meetings saw a bigger improvement from baseline to follow-up scoring between "sometimes" and "fairly often" at follow-up; the participants who did not attend any monthly meetings remained in the "almost never" to "sometimes" range (Appendix C, Table 1). The findings are not surprising due to a strong emphasis on the importance of effective communication with the doctor during monthly meetings.

All analyses should be interpreted with caution, however, because participants with no monthly meeting attendance are underrepresented among those who returned a follow-up questionnaire. Of those participants who returned a 6-month questionnaire, only 32% did not attend any monthly meetings, whereas of those who did not return a 6-month questionnaire, 61% did not attend any monthly meetings. Of those who returned a 12-month questionnaire, only 21% did not attend any monthly meetings and 18% attended only 1 or 2 monthly meetings. Of those who did not return a 12-

month questionnaire, 49% did not attend any monthly meetings and 28% attended only 1 or 2 monthly meetings.

Participants who tend to not attend monthly meetings might be significantly different from those who do, but those differences would not be adequately captured in the analyses (due to the self-selection bias by those who chose to return the questionnaire). For example, of those who attended no monthly meetings, a higher percentage indicated at baseline that they had already made changes to the way they ate compared to participants who attended any of the monthly meetings (Appendix C, Table 1). Similarly, in the baseline with 12-month follow-up comparison, the participants who did not attend any monthly meetings scored lower on depression at baseline (in the minimal depression range) than the participants who attended any of the meetings (Appendix C, Table 1). The participants who did not attend any monthly meetings had lower BMI and LDL scores at baseline compared to the participants who attended monthly meetings. On all three bio-metric measures, the participants who attended monthly meetings saw bigger improvements by follow-up than the participants who did not attend any of the monthly meetings (although these differences were not statistically significant). Repeated measures analyses do not compare the scores of different samples at baseline or follow-up, only whether the pattern of change from baseline to follow-up is different.

Monthly Meeting Attendance and Evaluation

Overall, in the first year after graduation, of the participants who graduated at least 10 months prior to when this report was written, 42% attended no monthly meetings, 36% attended 1-5 of the available 10 meetings, and 22% attended 5-10 monthly meetings.

Figure 12. What prevents participants from attending
N=173

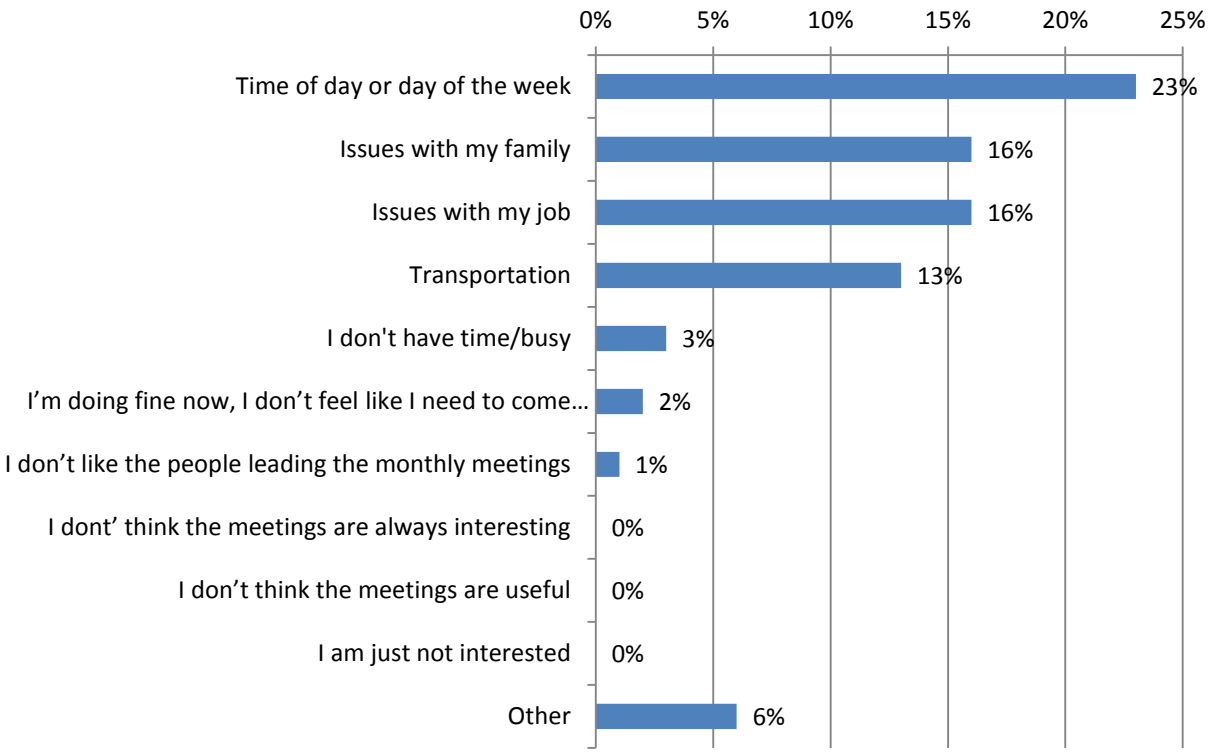
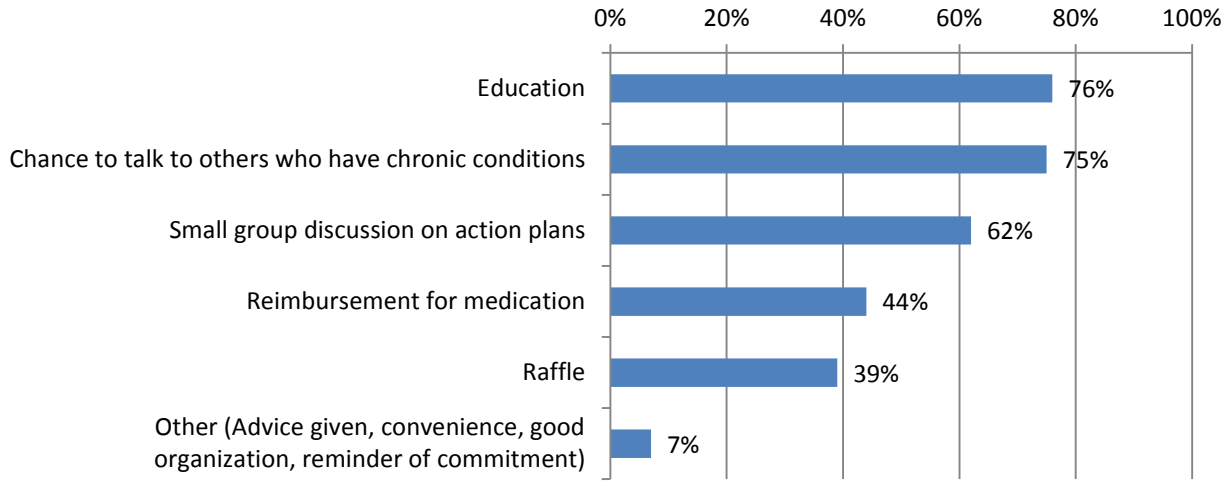


Figure 13. What participant who attend find useful about monthly meetings
N=124



*The total adds up to more than 100%, because participants were able to select more than one response.

When surveyed about monthly meeting attendance (in a survey independent of the evaluation survey), scheduling, family or work obligations, and transportation seem to be the most common reasons for poor attendance (Figure 12).

Of the respondents who attended at least one monthly meeting, education, chance to talk other who have a chronic condition, and a small group discussion on action plans seem to be the most useful elements (Figure 13).

Even though 44% of the participants find reimbursement for medication useful (Figure 13), and 89% indicated that having a chance to receive reimbursement for medication was either important or very important to them, 93% of participants indicated that they would have attended the meetings as often as they do now even if reimbursement for medication was not offered.

DISCUSSION OF RESULTS

The results presented in this report demonstrate excellent outcomes for participants of the CDSMP workshops offered by UHH. Participants showed statistically significant improvements on almost all measures included in the evaluation: self-reported health, changing eating behavior, depression, shortness of breath, pain, time spent on exercise per week, health interfering with daily activities, and communication with the doctor. Mean LDL results improved significantly overall and patients with much higher than normal BMI, HgbA1c, and blood pressures showed statistically significant improvements. The results, overall, support the findings of previous studies and provide additional evidence that improvements can be sustained to 12 months after program completion.

The most recent multi-site national study of the program also found significant decreases in ER and inpatient utilization. [29] Although the current study did show a trend towards a reduction in ER and inpatient utilization, it was not statistically significant. In the cohort reported here, the number of ER visits and inpatient stays were relatively infrequent, underscoring that our study was underpowered to show a statistically significant difference. Our cohort of younger commercial patients also likely had less severe chronic illness than reported in other studies. For example, 55% of the participants in the current study reported having 2 or more chronic conditions, compared to 79% in the national study (Table 7).[9] Participants in the current study also scored lower on depression, pain, shortness of breath, and had lower overall IP and ER utilization than the average in the national study at both baseline and follow-up.[9]

Given the fact that later recruits to the program were more likely to be in poorer health, continuing the analysis for another year (or longer) should accumulate enough ER visits and hospital days to make firmer inferences about improvements in utilization. Initially, participants were recruited from surveys distributed to all participants, by word of mouth, and by staff visits to workplaces. About midway through the evaluation period, Kaiser Permanente began supplying lists of participants with chronic conditions and high gap scores; this enabled staff to recruit participants that were more likely to have low levels of self-management.

Our study cohort also differed socioeconomically and culturally from other studies of CDSMP (Table 7). Our participants, on average, were younger than the participants in most other CDSMP programs – 73% are between the ages of 45-65, with the mean age of 53, compared to the reported 72% of participants in CDSMP programs in general being age 60 or over,[30] with the mean age of 65.[9] The program was able to attract more men than other programs – 40% of the participants in the current study were men compared to only 17% nationally.[10] The majority of participants in the current study were of Latino origin (91%) while nationally only 17-22% of participants in CDSMP are of Latino origin.[9,10] Furthermore, the majority of our Latino enrolled population was born and reared outside of the U.S, a group that has traditionally not been enrolled in programs like this one to any great extent. Thus most of our sessions were conducted by Spanish speaking facilitators and using a Spanish based curriculum to an extent not previously reported in any published study.

[29] Ory, M. G., Ahn, S., Jiang, L., Smith, M. L., Ritter, P., Whitelaw, N., & Lorig, K. (2013). Successes of a national study of the Chronic Disease Self-Management Program: Meeting the triple aim of health care reform. *Medical Care, 51*(11), 992-998.

[30] National Council on Aging. (2014). [CDSME Infographic]. *Chronic Disease Self-Management Education Programs*. Retrieved from http://www.ncoa.org/assets/files/pdf/center-for-healthy-aging/NCOA-CDSME-Infographic_final.pdf

Table 7. Comparison of participants in UHH CDSMP to other studies		
Measure	**UHH**	**Other Studies**
Age	73% age 45-65	72% age 60+
Mean Age	53	65
Male	40%	17%
Latino origin	91%	17-22%
2+ chronic conditions	55%	79%

All of the differences listed above could be attributed to the fact that most CDSMP classes offered nationally focus on the Medicare population, while the current program is offered to a working population.

The study also did not include a control group for comparison, as there was no opportunity to randomize or employ any other method of obtaining a comparison group.

Overall, the study demonstrates that CDSMP programs can be successfully implemented on a large scale in a working, predominately Latino population, with significant male participation and that UHH members who participated in the program improved their health and health outcomes on both self-reported measures of well-being and on lab reported biometrics.

APPENDIX A. Baseline Questionnaire.

UNITE HERE HEALTH

Chronic Condition Program Survey

better LIVING ¡vivir MEJOR!

This survey is completely voluntary and confidential. You can participate in the workshops without filling out this survey. If you take the survey, the health and personal information you provide is completely confidential. Except for trained UNITE HERE HEALTH staff and providers who will use your information in connection with the chronic condition program, no one at UNITE HERE HEALTH, your employer, or your union will have access to any of the individual health or other personal information you provide. UNITE HERE HEALTH may also use your information at the aggregate (group) level to help us better understand the overall health needs of our participants; however, your specific personal and health information will not be identifiable in any group reports.

Name *(print)* _____ Gender *(circle)*: M or F Today's Date _____

Address _____

Home Phone _____ Cell Phone _____ Date of Birth _____

Workplace _____ Job Classification _____

Ethnic origin:

❑1 White not Hispanic ❑2 Black not Hispanic ❑3 Hispanic
❑4 Asian or Pacific Islander ❑5 Filipino ❑6 American Indian/Alaskan Native
❑7 Other _____

Please circle the HIGHEST year of school you completed (in this country or another country):

Primary school	Junior High/High School	College/University/Graduate School
1 2 3 4 5 6	7 8 9 10 11 12	13 14 15 16 17+

Please check which chronic condition(s) you have:

❑1 Diabetes
❑2 High Blood Pressure
❑3 Asthma
❑4 High Cholesterol
❑5 Emphysema or COPD
❑6 Other lung disease (type: _____)
❑7 Heart disease (type: _____)
❑8 Arthritis (type: _____)
❑9 Cancer (type: _____)
❑10 Other chronic condition (specify: _____)

1. In general, you would say your health is: *(check one)*

❑$_1$ Poor ❑$_2$ Fair ❑$_3$ Good ❑$_4$ Very Good ❑$_5$ Excellent

2. In the past month, how many days of work have you missed because of your chronic condition?

_____ day(s)

3. Since you found out you have a chronic condition, have you done anything to change the way you eat?

❑$_1$ Yes; if so, what have you done? _____

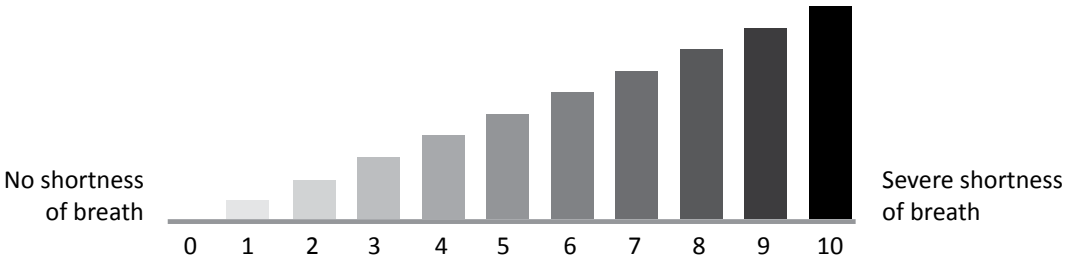
❑$_2$ No

4. Over the past 2 weeks, how often have you been bothered by any of the following problems?

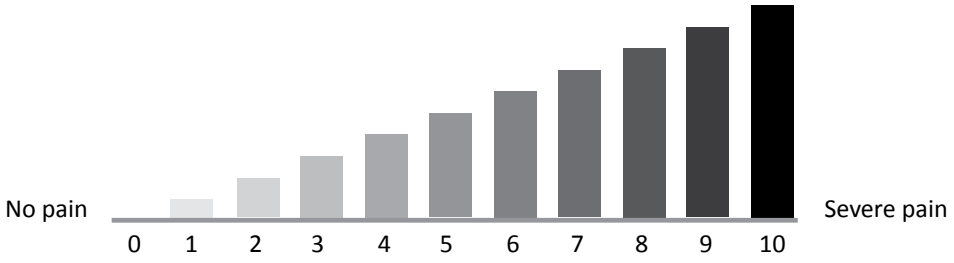
(circle one number for each activity)

	Not at all	***Several days***	***More than half the days***	***Nearly every day***
a) Little interest or pleasure in doing things?	0	1	2	3
b) Feeling down, depressed, or hopeless?	0	1	2	3
c) Trouble falling or staying asleep, or sleeping too much?	0	1	2	3
d) Feeling tired or having little energy?	0	1	2	3
e) Poor appetite or overeating?	0	1	2	3
f) Feeling bad about yourself, or that you are a failure, or feeling that you've let yourself or your family down?	0	1	2	3
g) Trouble concentrating on things, such as reading or watching television?	0	1	2	3
h) Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual?	0	1	2	3

5. Please circle the number below that describes your Shortness of Breath in the last 2 weeks:



6. Please circle the number below that describes your Pain in the last 2 weeks:



7. During the past WEEK, even if it was not a typical week for you, how much total time (for the entire week) did you spend on each of the following? *(circle one number for each question)*

	None	*Less than 30 minutes*	*30-60 minutes*	*1-3 hours*	*More than 3 hours*
a) Stretching or strengthening exercises	0	1	2	3	4
b) Walking for exercise	0	1	2	3	4
c) Swimming or aquatic exercise	0	1	2	3	4
d) Bicycling *(including stationary exercise bike)*	0	1	2	3	4
e) Using other aerobic exercise equipment *(Stairmaster, rowing machine, elliptical machine, etc.)*	0	1	2	3	4
f) Other aerobic activity *(Zumba, dancing, etc.)* *(Please specify: _____)*	0	1	2	3	4

During the past two weeks, how much has your health interfered with your: *(circle one number for each question)*

	Not at all	*Slightly*	*Moderately*	*Quite a bit*	*Almost totally*
8. Normal social activities with family, friends, neighbors, or groups?	0	1	2	3	4
9. Hobbies or recreational activities?	0	1	2	3	4
10. Household chores?	0	1	2	3	4
11. Errands and shopping?	0	1	2	3	4

12. When you visit your doctor, how often do you do the following? *(circle one number for each question)*

	Never	*Almost never*	*Sometimes*	*Fairly often*	*Very often*	*Always*
a) Prepare a list of questions for your doctor	0	1	2	3	4	5
b) Ask questions about things you want to know and things you don't understand about your treatment	0	1	2	3	4	5
c) Discuss any personal problems that may be related to your illness	0	1	2	3	4	5

13. In the past 6 months, how many times did you...

a) Visit a doctor? *(Do not include visits while in the hospital or emergency room)* _____ visits

b) Go to the emergency room? _____ visits

c) Stay in the hospital overnight or longer? _____ times

If you've stayed in the hospital overnight, how many total NIGHTS did you spend during these stays? _____ nights

APPENDIX B. Follow-Up Questionnaire.

UNITE HERE HEALTH

Chronic Condition Follow-Up Survey

better LIVING ¡vivir MEJOR!

This survey is completely voluntary and confidential. You can participate in the workshops without filling out this survey. If you take the survey, the health and personal information you provide is completely confidential. Except for trained UNITE HERE HEALTH staff and providers who will use your information in connection with the chronic condition program, no one at UNITE HERE HEALTH, your employer, or your union will have access to any of the individual health or other personal information you provide. UNITE HERE HEALTH may also use your information at the aggregate (group) level to help us better understand the overall health needs of our participants; however, your specific personal and health information will not be identifiable in any group reports.

FOR OFFICE USE: ❑ 6 week ❑ 6 month ❑ 1 year ❑ 2 year

Name *(print)* _____ Gender *(circle)*: M or F Today's Date _____

Address _____

Home Phone _____ Cell Phone _____ Date of Birth _____

Workplace _____ Job Classification _____

Please check which chronic condition(s) you have:

- ❑$_1$ Diabetes
- ❑$_2$ High Blood Pressure
- ❑$_3$ Asthma
- ❑$_4$ High Cholesterol
- ❑$_5$ Emphysema or COPD
- ❑$_6$ Other lung disease (type: _____)
- ❑$_7$ Heart disease (type: _____)
- ❑$_8$ Arthritis (type: _____)
- ❑$_9$ Cancer (type: _____)
- ❑$_{10}$ Other chronic condition (specify: _____)

1. In general, you would say your health is: *(check one)*

❑$_1$ Excellent ❑$_2$ Very Good ❑$_3$ Good ❑$_4$ Fair ❑$_5$ Poor

2. In the past month, how many days of work have you missed because of your chronic condition?

_____ day(s)

3. Since you've been in the Better Living Program, have you done anything to change the way you eat?

❑$_1$ Yes; if so, what have you done? _____

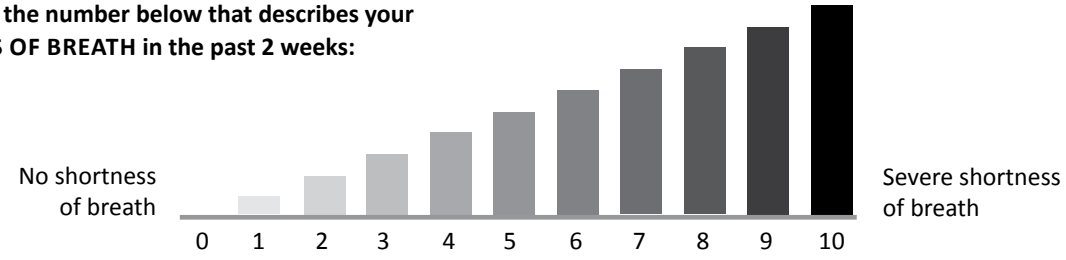
❑$_2$ No

4. Over the past 2 weeks, how often have you been bothered by any of the following problems?

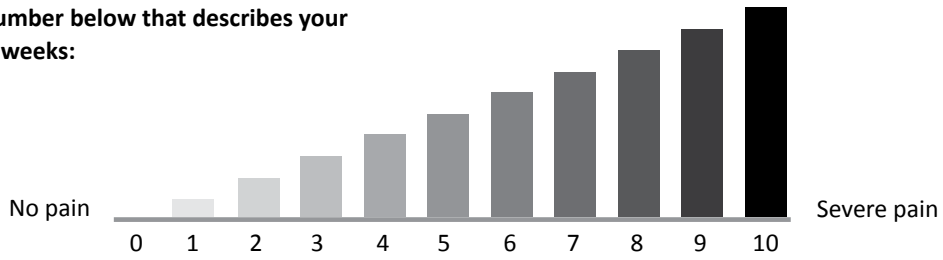
(circle one number for each activity)

	Not at all	*Several days*	*More than half the days*	*Nearly every day*
a) Little interest or pleasure in doing things?	0	1	2	3
b) Feeling down, depressed, or hopeless?	0	1	2	3
c) Trouble falling or staying asleep, or sleeping too much?	0	1	2	3
d) Feeling tired or having little energy?	0	1	2	3
e) Poor appetite or overeating?	0	1	2	3
f) Feeling bad about yourself, or that you are a failure, or feeling that you've let yourself or your family down?	0	1	2	3
g) Trouble concentrating on things, such as reading or watching television?	0	1	2	3
h) Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual?	0	1	2	3

5. Please circle the number below that describes your SHORTNESS OF BREATH in the past 2 weeks:



6. Please circle the number below that describes your PAIN in the past 2 weeks:



7. During the past WEEK, even if it was not a typical week for you, how much total time (for the entire week) did you spend on each of the following? *(circle one number for each question)*

	None	*Less than 30 minutes*	*30-60 minutes*	*1-3 hours*	*More than 3 hours*
a) Stretching or strengthening exercises	0	1	2	3	4
b) Walking for exercise	0	1	2	3	4
c) Swimming or aquatic exercise	0	1	2	3	4
d) Bicycling *(including stationary exercise bikes)*	0	1	2	3	4
e) Using other aerobic exercise equipment *(Stairmaster, rowing machine, elliptical machine, etc.)*	0	1	2	3	4
f) Other aerobic activity *(Zumba, dancing, etc.)* *(Please specify: _____)*	0	1	2	3	4

During the past two weeks, how much has your health interfered with your: *(circle one number for each question)*

	Not at all	*Slightly*	*Moderately*	*Quite a bit*	*Almost totally*
8. Normal social activities with family friends, neighbors, or groups?	0	1	2	3	4
9. Hobbies or recreational activities?	0	1	2	3	4
10. Household chores?	0	1	2	3	4
11. Errands and shopping?	0	1	2	3	4

12. When you visit your doctor, how often do you do the following? *(circle one number for each question)*

	Never	*Almost never*	*Sometimes*	*Fairly often*	*Very often*	*Always*
a) Prepare a list of questions for your doctor	0	1	2	3	4	5
b) Ask questions about things you want to know and things you don't understand about your treatment	0	1	2	3	4	5
c) Discuss any personal problems that may be related to your illness	0	1	2	3	4	5

APPENDIX C. Results of the Repeated-Measures ANOVA.

Table 1. Results of the Repeated-Measures ANOVA	N	Baseline		Follow-up		Pillai's Trace	F	df	p
		Mean	SD	Mean	SD				
Overall Health (lower mean score is better) 1=excellent 2=very good 3 = good 4 = fair 5=poor									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	82	3.8	0.7	3.3	0.9				
Attended at least 1 of 4 monthly meetings	154	3.6	0.9	3.2	0.9	0.002	0.506	(1, 234)	0.478
Baseline – 6 Month Follow-Up									
Attended 0 meetings	82	3.8	0.7	3.3	0.9				
Attended 1-2 monthly meetings	71	3.6	0.9	3.4	0.9	0.025	2.952	(2,233)	0.054
Attended 3-4 monthly meetings	83	3.6	0.9	3.1	0.9				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	39	3.6	0.8	3.3	0.7				
Attended at least 1 of 10 monthly meetings	123	3.6	0.8	3.1	0.8	0.007	1.056	(1, 160)	0.306
Baseline – 12 Month Follow-Up									
Attended 0 meetings	39	3.6	0.8	3.3	0.7				
Attended 1-5 monthly meetings	61	3.7	0.8	3.3	0.7	0.020	1.654	(2,159)	0.194
Attended 6-10 monthly meetings	62	3.6	0.8	2.9	0.9				
Days missed from work (lower mean score is better)									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	68	1.4	5.6	0.5	2.7				
Attended at least 1 of 4 monthly meetings	113	1.4	5.1	0.8	4.1	0.001	0.143	(1, 179)	0.706
Baseline – 6 Month Follow-Up									
Attended 0 meetings	68	1.4	5.6	0.5	2.7				
Attended 1-2 monthly meetings	56	1.8	5.8	1.4	5.7	0.002	0.204	(2,178)	0.816
Attended 3-4 monthly meetings	57	1.0	4.3	0.1	0.6				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	36	2.8	8.3	0.9	5.0				
Attended at least 1 of 10 monthly meetings	97	1.5	5.5	1.4	6.0	0.018	2.368	(1, 131)	0.126
Baseline – 12 Month Follow-Up									
Attended 0 meetings	36	2.8	8.3	0.9	5.0				
Attended 1-5 monthly meetings	50	0.8	2.6	0.7	4.3	0.018	1.183	(2,130)	0.310
Attended 6-10 monthly meetings	47	2.2	7.4	2.0	7.4				

Table 1. Results of the Repeated-Measures ANOVA	N	Baseline		Follow-up		Pillai's Trace	F	df	p
		Mean	SD	Mean	SD				
Changing eating behavior (higher mean score is better) 0 = No 1 = Yes. An example: a score of 0.79 means that 79% of participants answered "yes".									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	75	0.79	0.41	0.95	0.23				
Attended at least 1 of 4 monthly meetings	132	0.74	0.44	0.99	0.12	0.009	1.945	(1, 205)	0.165
Baseline – 6 Month Follow-Up									
Attended 0 meetings	75	0.79	0.41	0.95	0.23				
Attended 1-2 monthly meetings	61	0.66	0.48	0.97	0.18	0.020	2.060	(2,204)	0.130
Attended 3-4 monthly meetings	71	0.80	0.40	1.00	0.00				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	39	0.87	0.34	0.92	0.27				
Attended at least 1 of 10 monthly meetings	112	0.77	0.42	0.98	0.13	0.024	3.724	(1, 149)	0.056
Baseline – 12 Month Follow-Up									
Attended 0 meetings	39	0.87	0.34	0.92	0.27				
Attended 1-5 monthly meetings	55	0.75	0.44	0.98	0.14	0.026	1.980	(2,148)	0.142
Attended 6-10 monthly meetings	57	0.79	0.41	0.98	0.13				
Depression (lower mean score is better) 0 = no depression, 1-4 = minimal depression, 5-9 =mild depression, 10-14 = moderate depression, 15-19 = moderately-severe depression, 20-27 = severe depression									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	57	5.7	4.8	3.2	4.1				
Attended at least 1 of 4 monthly meetings	70	5.5	4.9	3.0	3.7	0.000	0.005	(1, 125)	0.945
Baseline – 6 Month Follow-Up									
Attended 0 meetings	57	5.7	4.8	3.2	4.1				
Attended 1-2 monthly meetings	33	6.0	4.4	3.3	3.4	0.001	0.050	(2,124)	0.952
Attended 3-4 monthly meetings	37	5.1	5.3	2.8	4.1				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	31	3.4	3.3	2.0	2.8				
Attended at least 1 of 10 monthly meetings	51	6.5	5.7	3.3	4.1	0.038	3.176	(1, 80)	0.079
Baseline – 12 Month Follow-Up									
Attended 0 meetings	31	3.4	3.3	2.0	2.8				
Attended 1-5 monthly meetings	28	6.5	5.4	2.9	3.6	0.045	1.869	(2,79)	0.161
Attended 6-10 monthly meetings	23	6.4	6.2	3.7	4.7				

Table 1. Results of the Repeated-Measures ANOVA	N	Baseline		Follow-up		Pillai's Trace	F	df	p
		Mean	SD	Mean	SD				
Shortness of Breath (lower mean score is better) 0 = no shortness of breath, 10 = severe shortness of breath									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	68	1.3	2.4	0.8	2.0				
Attended at least 1 of 4 monthly meetings	81	1.6	2.6	0.8	1.8	0.003	0.432	(1, 147)	0.512
Baseline – 6 Month Follow-Up									
Attended 0 meetings	68	1.3	2.4	0.8	2.0				
Attended 1-2 monthly meetings	39	1.7	2.2	1.0	2.2	0.004	0.272	(2,146)	0.762
Attended 3-4 monthly meetings	42	1.5	2.9	0.5	1.3				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	31	1.4	2.6	1.0	1.9				
Attended at least 1 of 10 monthly meetings	58	1.5	2.5	0.9	2.1	0.002	0.172	(1, 87)	0.679
Baseline – 12 Month Follow-Up									
Attended 0 meetings	31	1.4	2.6	1.0	1.9				
Attended 1-5 monthly meetings	31	1.6	2.2	0.7	2.0	0.006	0.269	(2,86)	0.764
Attended 6-10 monthly meetings	27	1.4	2.8	1.0	2.3				
Pain (lower mean score is better) 0 = no pain, 10 = severe pain									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	78	3.5	3.3	1.9	2.9				
Attended at least 1 of 4 monthly meetings	153	3.4	3.2	2.4	3.2	0.007	1.515	(1, 229)	0.220
Baseline – 6 Month Follow-Up									
Attended 0 meetings	78	3.5	3.3	1.9	2.9				
Attended 1-2 monthly meetings	70	3.9	3.2	3.3	3.5	0.013	1.448	(2,228)	0.237
Attended 3-4 monthly meetings	83	2.9	3.2	1.6	2.7				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	38	2.8	3.2	2.1	2.8				
Attended at least 1 of 10 monthly meetings	117	3.4	3.2	2.1	2.9	0.005	0.769	(1, 153)	0.382
Baseline – 12 Month Follow-Up									
Attended 0 meetings	38	2.8	3.2	2.1	2.8				
Attended 1-5 monthly meetings	58	3.6	3.3	2.1	3.1	0.008	0.617	(2,152)	0.541
Attended 6-10 monthly meetings	59	3.1	3.1	2.1	2.8				

Table 1. Results of the Repeated-Measures ANOVA	N	Baseline		Follow-up		Pillai's Trace	F	df	p
		Mean	SD	Mean	SD				
Stretching/Strengthening Exercise (minutes) (higher mean score is better)									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	78	19	38	24	37				
Attended at least 1 of 4 monthly meetings	150	22	36	28	34	0.000	0.027	(1, 226)	0.870
Baseline – 6 Month Follow-Up									
Attended 0 meetings	78	19	38	24	37				
Attended 1-2 monthly meetings	71	11	18	18	26	0.000	0.022	(2,225)	0.978
Attended 3-4 monthly meetings	79	31	44	37	38				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	38	21	36	19	24				
Attended at least 1 of 10 monthly meetings	116	22	34	35	49	0.017	2.598	(1, 152)	0.109
Baseline – 12 Month Follow-Up									
Attended 0 meetings	38	21	36	19	24				
Attended 1-5 monthly meetings	59	19	31	34	51	0.017	1.344	(2,151)	0.264
Attended 6-10 monthly meetings	57	25	36	37	48				
Aerobic Exercise (minutes) (higher mean score is better)									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	81	63	92	81	87				
Attended at least 1 of 4 monthly meetings	156	64	82	66	79	0.005	1.228	(1, 235)	0.269
Baseline – 6 Month Follow-Up									
Attended 0 meetings	81	63	92	81	87				
Attended 1-2 monthly meetings	72	41	62	55	77	0.012	1.478	(2,234)	0.230
Attended 3-4 monthly meetings	84	84	91	77	79				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	41	55	75	70	79				
Attended at least 1 of 10 monthly meetings	122	63	79	89	100	0.002	0.337	(1, 161)	0.563
Baseline – 12 Month Follow-Up									
Attended 0 meetings	41	55	75	70	79				
Attended 1-5 monthly meetings	60	45	65	90	114	0.027	2.247	(2,160)	0.109
Attended 6-10 monthly meetings	62	82	87	89	86				

Table 1. Results of the Repeated-Measures ANOVA	N	Baseline		Follow-up		Pillai's Trace	F	df	p
		Mean	SD	Mean	SD				
Health Interfering with Daily Activities (lower mean score is better) 0 = not at all, 1=slightly, 2=moderately, 3=quite a bit, 4=almost totally									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	80	0.62	0.91	0.37	0.72				
Attended at least 1 of 4 monthly meetings	155	0.66	0.90	0.52	0.84	0.002	0.520	(1, 233)	0.472
Baseline – 6 Month Follow-Up									
Attended 0 meetings	80	0.62	0.91	0.37	0.72				
Attended 1-2 monthly meetings	70	0.79	0.95	0.62	0.92	0.002	0.279	(2,232)	0.757
Attended 3-4 monthly meetings	85	0.56	0.85	0.43	0.76				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	41	0.73	0.98	0.32	0.54				
Attended at least 1 of 10 monthly meetings	121	0.65	0.90	0.51	0.78	0.013	2.093	(1, 160)	0.150
Baseline – 12 Month Follow-Up									
Attended 0 meetings	41	0.73	0.98	0.32	0.54				
Attended 1-5 monthly meetings	60	0.73	0.89	0.47	0.74	0.024	1.971	(2,159)	0.143
Attended 6-10 monthly meetings	61	0.56	0.91	0.55	0.83				
Communicating with the doctor (higher mean score is better) 0 = never, 1=almost never, 2=sometimes, 3=fairly often, 4=very often, 5=always									
Baseline – 6 Month Follow-Up									
Attended 0 monthly meetings	80	1.47	1.23	2.23	1.39				
Attended at least 1 of 4 monthly meetings	155	1.62	1.30	2.32	1.40	0.000	0.067	(1, 233)	0.796
Baseline – 6 Month Follow-Up									
Attended 0 meetings	80	1.47	1.23	2.23	1.39				
Attended 1-2 monthly meetings	71	1.76	1.38	2.21	1.49	0.016	1.878	(2,232)	0.155
Attended 3-4 monthly meetings	84	1.51	1.24	2.42	1.33				
Baseline – 12 Month Follow-Up									
Attended 0 meetings	41	1.62	1.36	1.89	1.36				
Attended at least 1 of 10 monthly meetings	122	1.62	1.30	2.36	1.42	0.018	2.984	(1, 161)	0.086
Baseline – 12 Month Follow-Up									
Attended 0 meetings	41	1.62	1.36	1.89	1.36				
Attended 1-5 monthly meetings	60	1.71	1.22	2.12	1.46	0.055	4.641	(2,160)	0.011*
Attended 6-10 monthly meetings	62	1.52	1.37	2.59	1.36				

*Statistically significant at 0.05 level

Table 1. Results of the Repeated-Measures ANOVA	N	Baseline		Follow-up		Pillai's Trace	F	df	p
		Mean	SD	Mean	SD				
BMI >=30 (lower mean score is better)									
Attended 0 meetings	28	34.2	3.9	33.7	4.6	0.008	0.445	(2,109)	0.642
Attended 0-1/2 monthly meetings	46	35.6	5.1	34.7	4.9				
Attended more than 1/2 monthly meetings	38	35.8	5.2	34.9	5.4				
LDL (no out of control criteria applied) (lower mean score is better)									
Attended 0 meetings	38	104	48	99	33	0.010	0.564	(2,110)	0.570
Attended 0-1/2 monthly meetings	37	108	48	96	32				
Attended more than 1/2 monthly meetings	38	109	42	96	33				
Hemoglobin A1C (A1C>=8) (lower mean score is better)									
Attended 0 meetings	12	9.9	1.9	9.3	1.7	0.009	0.173	(2,37)	0.842
Attended 0-1/2 monthly meetings	13	9.7	1.5	8.6	1.3				
Attended more than 1/2 monthly meetings	15	9.6	1.4	8.9	1.4				