Chronic Disease Self-Management Program
Summary of National and State Translational Research Study Findings

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Virginia Department of Health
Appendix 1

Take Control of Your Health: Chronic Disease Self-Management Program

Manisha Agrawal, Nirvana Petlick, Margaret Koller
This memo summarizes the survey findings from “Take Control of Your Health: Chronic Disease Self-Management Program” workshops held from January 1-July 31, 2013. The Chronic Disease Self-Management Program (CDSMP) is a workshop, developed by the Stanford Patient Education Research Center to enhance disease-specific education and to help people and/or their caregivers with chronic conditions (e.g., asthma, heart disease, diabetes, obesity, etc.) gain self-confidence in their ability to control their symptoms by building skills and sharing experiences and support. These interactive workshops are held for two and a half hours, once a week, for six weeks. The workshop takes place in a small group workshop format in community settings such as senior centers, churches, libraries, clinics, and hospitals. The workshops are facilitated by two trained leaders, one or both of whom are non-health professionals with at least one chronic condition. The sessions can be offered in either English or Spanish based on the participants enrolled. Four types of workshops are offered in NJ: (1) CDSMP; (2) Tomando Control de su Salud (Spanish CDSMP); (3) Diabetes Self-Management Program (DSMP); and (4) Programa de Manejo Personal de la Diabetes (Spanish Diabetes).

Each Master Trainer or Peer Leader in the workshop is required to complete the “Workshop Information Cover Sheet” and the “Attendance Log.” The participants fill out three survey forms - the “Pre-Workshop Survey”, “Post-Workshop Survey”, and the “Participant Information Survey.” The purpose of these forms is to find out the effectiveness of the CDSMP program outreach, and to learn if the self-management workshop attendees show improvement in self-rated health, self efficacy, social/role activities limitation, physical activity, communication with the physicians, and healthcare utilization after attending the workshop. OMMH collected these
completed forms and provided Rutgers Center for State Health Policy (CSHP) with de-identified data sets for analysis. The data was analyzed using SPSS.

Results

Workshop Information
(see Figure 1 and Table 1)

Overall, 44 CDSMP workshops were offered in 11 counties in New Jersey from January to July 2013. Most workshops (N=9) were held in Burlington County followed by Hunterdon County (N=8). Among the four types of workshops offered, 33 workshops were CDSMP; 7 were Tomando Control de su Salud (Spanish CDSMP); and 3 were Diabetes Self-Management Program. For workshop delivery language, 30 sessions were offered in English, 7 sessions were offered in Spanish, and 6 sessions were offered in Korean. Only 5 workshops offered “Session 0” to their participants. Overall, 494 participants attended at least 1 session and 375 participants completed at least 4 sessions.

Attendance log

From January to July 2013 (see Figure 1), 334 people and/or their caregivers participated in the workshops held in eleven counties. Among those who participated, 262 people and/or their caregivers were enrolled in session 1; 40 participants completed 4 sessions; 107 participants completed 5 sessions; and 107 participants completed all 6 sessions.

<table>
<thead>
<tr>
<th>Figure 1: Workshop Information at a Glance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workshop Information</strong></td>
</tr>
<tr>
<td>• 44 workshops held in 11 counties</td>
</tr>
<tr>
<td>• Highest number of workshops were held in Burlington County</td>
</tr>
<tr>
<td>• 494 participants attended at least 1 session</td>
</tr>
<tr>
<td><strong>Attendance Log</strong></td>
</tr>
<tr>
<td>• 262 participants were enrolled in session 1</td>
</tr>
<tr>
<td>• 107 participants completed 5 sessions</td>
</tr>
<tr>
<td>• 107 participants completed all 6 sessions</td>
</tr>
<tr>
<td><strong>Pre-Workshop Survey</strong></td>
</tr>
<tr>
<td>• 269 participants completed the pre-workshop survey</td>
</tr>
<tr>
<td><strong>Post-Workshop Survey</strong></td>
</tr>
<tr>
<td>• 150 participants completed the post-workshop survey</td>
</tr>
<tr>
<td>Table 1: Item Frequencies, Workshop Information</td>
</tr>
<tr>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Total number of workshops</td>
</tr>
<tr>
<td><strong>Region – County</strong></td>
</tr>
<tr>
<td>Bergen</td>
</tr>
<tr>
<td>Burlington</td>
</tr>
<tr>
<td>Camden</td>
</tr>
<tr>
<td>Cape May</td>
</tr>
<tr>
<td>Cumberland</td>
</tr>
<tr>
<td>Essex</td>
</tr>
<tr>
<td>Hunterdon</td>
</tr>
<tr>
<td>Mercer</td>
</tr>
<tr>
<td>Middlesex</td>
</tr>
<tr>
<td>Union</td>
</tr>
<tr>
<td>Warren</td>
</tr>
<tr>
<td><strong>Type of Workshop</strong></td>
</tr>
<tr>
<td>Chronic Disease Self-Management Program</td>
</tr>
<tr>
<td>Diabetes Self-Management Program</td>
</tr>
<tr>
<td>Tomando Control de su Salud</td>
</tr>
<tr>
<td><strong>Language workshop was delivered</strong></td>
</tr>
<tr>
<td>English</td>
</tr>
<tr>
<td>Spanish</td>
</tr>
<tr>
<td>Korean</td>
</tr>
<tr>
<td><strong>“Session 0” offered</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Number of Participants Enrolled, attending at least 1 session</td>
</tr>
<tr>
<td>Number of Participants completing at least 4 sessions</td>
</tr>
</tbody>
</table>

*Does not include missing values
**Pre-Post-Workshop Participant Survey**
*(data available from February-November 2013)*

**Demographic Information**
(see Table 2)

- Overall, a little more than half (55.5%) of the participants were females.
- One-third (33.8%) of the participants were ages 65 and older, and more than one-third (35.7%) of the participants were ages 45-64.
- One-fourth (25.8%) of the participants were Black or African-American, one-fifth (19.8%) were Korean, and less than one-tenth (8.4%) were White or Caucasian. However, more than one-third (37.8%) reported “Other” as their race, and 6.4% reported more than 1 race, indicating the diversity that exists in NJ.
- About 4 in 10 (39.7%) were of Hispanic, Latino or Spanish origin.
- For marital status, about 4 in 10 (39.6%) were married, and over one-fourth (26.2%) were single.
- Nearly one-third (32.2%) completed either some high school or less than high school. About 2 in 10 (21.0%) were high school graduates, more than one-fifth (23.0%) completed some college or vocational school, and nearly one-fourth (23.8%) were college graduates or completed graduate school.
<table>
<thead>
<tr>
<th>Table 2: Item Frequencies, Participant Demographics</th>
<th>N</th>
<th>Valid%*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total number of participants</strong></td>
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<td>100</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>114</td>
<td>44.5</td>
</tr>
<tr>
<td>Female</td>
<td>142</td>
<td>55.5</td>
</tr>
<tr>
<td><strong>Age Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 25</td>
<td>6</td>
<td>2.3</td>
</tr>
<tr>
<td>25-34</td>
<td>50</td>
<td>18.8</td>
</tr>
<tr>
<td>35-44</td>
<td>25</td>
<td>9.4</td>
</tr>
<tr>
<td>45-54</td>
<td>48</td>
<td>18.0</td>
</tr>
<tr>
<td>55-64</td>
<td>47</td>
<td>17.7</td>
</tr>
<tr>
<td>65+</td>
<td>90</td>
<td>33.8</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>Asian or Asian-American</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Korean</td>
<td>52</td>
<td>19.8</td>
</tr>
<tr>
<td>Hawaiian Native or Pacific Islander</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Black or African American</td>
<td>67</td>
<td>25.8</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>22</td>
<td>8.4</td>
</tr>
<tr>
<td>Other</td>
<td>99</td>
<td>37.8</td>
</tr>
<tr>
<td>More than 1 race</td>
<td>16</td>
<td>6.4</td>
</tr>
<tr>
<td><strong>Hispanic, Latino, or Spanish Origin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>102</td>
<td>39.7</td>
</tr>
<tr>
<td>No</td>
<td>153</td>
<td>59.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>103</td>
<td>39.6</td>
</tr>
<tr>
<td>Single</td>
<td>68</td>
<td>26.2</td>
</tr>
<tr>
<td>Separated</td>
<td>12</td>
<td>4.6</td>
</tr>
<tr>
<td>Divorced</td>
<td>25</td>
<td>9.6</td>
</tr>
<tr>
<td>Widowed</td>
<td>38</td>
<td>14.6</td>
</tr>
<tr>
<td>Partnered (living with someone)</td>
<td>14</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Level of Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>44</td>
<td>17.7</td>
</tr>
<tr>
<td>Some high school</td>
<td>36</td>
<td>14.5</td>
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<tr>
<td>High school graduate</td>
<td>52</td>
<td>21.0</td>
</tr>
<tr>
<td>Some college or vocational school</td>
<td>57</td>
<td>23.0</td>
</tr>
<tr>
<td>College graduate</td>
<td>40</td>
<td>16.1</td>
</tr>
<tr>
<td>Graduate school</td>
<td>19</td>
<td>7.7</td>
</tr>
</tbody>
</table>

*Does not include missing values
Self-Reported Chronic Conditions
(see Table 3)

- The top four chronic conditions reported were diabetes, hypertension, arthritis/rheumatic disease, and breathing/lung disease.
- More than half (53.5%) of the participants reported suffering from two or more chronic conditions and one-fourth (25.9%) reported suffering from one chronic condition.
- More than three-fourths (77.1%) reported that they were a “participant with a chronic condition” and nearly one-fourth (23.3%) reported that they were a “caregiver of a person with a chronic condition.”
- More than 8 in 10 (83.2%) reported not participating in the New Jersey PAAD (Pharmaceutical Assistance Program) program.

<table>
<thead>
<tr>
<th>Table 3: Item Frequencies, Chronic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td><strong>Chronic conditions</strong></td>
</tr>
<tr>
<td>1 chronic condition</td>
</tr>
<tr>
<td>2 or more chronic conditions</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>None</td>
</tr>
<tr>
<td><strong>I am a participant with a chronic condition</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td><strong>I am a caregiver of a person with a chronic condition</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td><strong>I participate in the New Jersey PAAD program</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>*Does not include missing values</td>
</tr>
</tbody>
</table>

Self-Reported General Health
(see Table 4 and Figure 2 below and Table I in the Appendix)

<table>
<thead>
<tr>
<th>Table 4: Pre-Post Mean Score for Self-Reported General Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test Mean (N=269)</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Overall mean</td>
</tr>
</tbody>
</table>
For general health, the overall mean increased from 2.7 in the pre-workshop survey to 3.1 in the post-workshop survey indicating that the self-reported overall health of the participants improved after attending the workshop.

- **Pre-workshop survey:** Nearly three-fourths (74.2%) of the participants reported their overall health to be either “good” or “fair” and less than two-fifths (18.7%) reported it to be either “very good” or “excellent.”
- **Post-workshop survey:** Among those completing the survey, nearly two-thirds (64.7%) reported it to be either “good” or “fair,” whereas more than one-fourth (27.4%) reported their overall health to be either “very good” or “excellent.”

### Social/Role Activities Limitation
(see Table 5)

#### Table 5: Pre-Post Mean Score for Social/Role Activities Limitation

<table>
<thead>
<tr>
<th></th>
<th>Pre-test Mean (N=269)</th>
<th>Post-test Mean (N=150)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall mean</td>
<td>1.1</td>
<td>0.9</td>
</tr>
</tbody>
</table>
With regard to responses to questions probing social/role activities limitation in the past two weeks, the overall mean decreased from 1.1 in the pre-workshop survey to 0.9 in the post-workshop survey indicating that the participants felt less limited in carrying out their social activities, hobbies, household chores, and shopping after attending the workshop. The mean decreased for all four items (i.e., interference of health with normal social activities with family, friends, neighbors or groups; interference of health with hobbies or recreational activities; interference of health with household chores; and interference of health with their errands and shopping) in this scale.

**Self-Efficacy**
(see Table 6)

<table>
<thead>
<tr>
<th></th>
<th>Pre-test Mean (N=269)</th>
<th>Post-test Mean (N=150)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall mean</td>
<td>5.8</td>
<td>7.3</td>
</tr>
</tbody>
</table>

With regard to questions about confidence in doing certain activities, the overall mean increased from 5.8 in the pre-workshop survey to 7.3 in the post-workshop survey indicating a change in health behavior and health status as participants felt more confident in completing their tasks regularly after attending the workshop. The mean improved for all responses to the six part question assessing the participant’s confidence with regular daily tasks (i.e., fatigue caused by their disease from interfering with the things they want to do; the physical discomfort or pain of their disease from interfering with the things they want to do; the emotional distress caused by their disease from interfering with the things they want to do; other symptoms or health problems they have from interfering with the things they want to do; doing different tasks and activities needed to manage their health condition so as to reduce their need to see a doctor; and doing things other than just taking medication to reduce how much their illness affects their everyday life).

**Physical Activity in the Past Week**
(see Figure 3 below and Table II in the Appendix)

For the total time spent in any physical activity in the past week, the percentage of participants not participating in any physical activity reduced markedly (21.6% vs. 6.2%) after attending the
workshop. Across most levels (except for less than 30 min/week), the percentage of participants participating in any physical activity increased after attending the workshop.

![Figure 3: Pre-Post-Workshop Participant Survey – Physical Activity in the Past Week](image)

**Communication with Physicians**
(see Table 7)

<table>
<thead>
<tr>
<th></th>
<th>Pre-test Mean (N=269)</th>
<th>Post-test Mean (N=150)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall mean</td>
<td>2.2</td>
<td>2.9</td>
</tr>
</tbody>
</table>

For communication with physicians during their visit, the overall mean increased from 2.2 in the pre-workshop survey to 2.9 in the post-workshop survey indicating that the participant’s communication with their physician improved after completing the workshop. The mean improved for all three items (i.e., preparing a list of questions for their doctor; asking questions about their treatment; and discussing any personal problems related to their illness) in this scale.
Healthcare Utilization in the Past 6 Months  
(see Figures 4-6 below and Table II in the Appendix)

- **Physician visit:** In the post-workshop survey, the percentage of participants visiting their physician 6-10 times decreased (10.6% vs. 6.3%), whereas the percentage visiting their physician 1-5 times increased (70.2% vs. 76.2%) from the pre-workshop survey. However, there was no change in the percentage of participants with no physician visits in the past 6 months (16.3% vs. 16.1%).

- **ER visit:** After attending the workshop, the percentage of participants reporting no ER visits increased slightly (78.9% vs. 81.9%) and the percentage for 4 or more ER visits dropped noticeably (4.4% vs. 0.7%) from the pre-workshop survey. However, the percentage of participants reporting 1-3 ER visits increased marginally (16.6% vs. 17.4%) in the post-workshop survey.

- **Hospitalization:** The percentage of participants with no hospitalizations (with at least one overnight stay) increased slightly (89.1% vs. 90.3%) after attending the workshop. However, the percentage of participants with 1-3 hospitalizations also increased (7.7% vs. 9.7%) in the post-workshop survey.

- **Number of nights in the hospital:** Participants reporting no overnight hospitalizations increased very modestly (90.2% vs. 92.1%), while the percent reporting 1-3 night stays dropped (5.3% vs. 3.6%) in the post-workshop survey. However, the percentage of participants increased (2.0% vs. 4.2%) for spending 4-9 nights in the hospital in the post-workshop survey.

- Only a small number of participants reported hospitalization at a skilled facility, convalescent hospital, or other minimum care facility in both pre-workshop (12.8%) and post-workshop (10.9%) survey.
Figure 4: Pre-Post-Workshop Participant Survey – Number of Physician Visits in the Past 6 Months

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Percentage Pre-workshop (N=269)</th>
<th>Percentage Post-workshop (N=150)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 times</td>
<td>16.3%</td>
<td>16.1%</td>
</tr>
<tr>
<td>1-5 times</td>
<td>6.3%</td>
<td>10.6%</td>
</tr>
<tr>
<td>6-10 times</td>
<td>11%</td>
<td>70.2%</td>
</tr>
<tr>
<td>11-15 times</td>
<td>0.7%</td>
<td>16.2%</td>
</tr>
<tr>
<td>16-20 times</td>
<td>0.4%</td>
<td>7.1%</td>
</tr>
<tr>
<td>&gt;20 times</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Figure 5: Pre-Post-Workshop Participant Survey – Number of ER Visits in the Past 6 Months

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Percentage Pre-workshop (N=269)</th>
<th>Percentage Post-workshop (N=150)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 visits</td>
<td>78.9%</td>
<td>81.9%</td>
</tr>
<tr>
<td>1-3 visits</td>
<td>16.6%</td>
<td>17.4%</td>
</tr>
<tr>
<td>4-6 visits</td>
<td>4.0%</td>
<td>0.7%</td>
</tr>
<tr>
<td>7-9 visits</td>
<td>0.7%</td>
<td>0.7%</td>
</tr>
<tr>
<td>10 or more visits</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>
Change in Life-Style
(see Figure 7)

Almost all participants agreed/strongly agreed (97.2%) that they made changes to their lifestyle (healthy eating, exercise, etc.) as a result of their participation in this workshop.
Conclusion

The data from the completed workshop information form and the attendance log show that from January to July 2013, 44 workshops were offered in 11 counties reaching out to a large number of racially and ethnically diverse populations (494 participants) with chronic conditions and/or their caregivers. Among those who participated (334 participants) in the workshop, more than three-fourths (76.0%) of the participants completed four or more sessions. Among those responding to the pre-workshop survey, more than half of the participants were females, one-third were ages 65 and more, one fourth were Black or African-American, one-fifth were Koreans, and more than one-third were of Hispanic origin. More than three-fourths were “participants with a chronic condition” and more than half reported suffering from more than one chronic condition.

Overall, for all measures (general health, social/role activities limitation, self-efficacy, physical activity, communication with the physicians, and healthcare utilization) the participants reported marked improvements after attending the workshop indicating a positive impact of the workshop on all these measures. Most participants made changes to their life-style and learned how to better handle their symptoms after attending the workshop.
Recommendations

To continue to build and expand CDSMP, as post-workshop survey showed a positive impact of the program, we offer following recommendations:

• Discuss the importance of completing both pre-workshop and post-workshop survey forms with all the participants. Only a little more than half of the participants (pre-workshop = 269; post-workshop = 150) completed the post-workshop survey.

• More than half of the participants reported suffering from two or more chronic conditions. Questions on health distress and depression should be added to understand how distress caused by illness changed after attending the workshop.

• Consider funding more organizations in counties with a large percentage of minority populations.

• Continue to be mindful of the literacy levels of targeted audiences as illustrated by the fact that nearly one-third of the participants had only completed some high school.
Appendix

Pre- Post-Workshop Participant Survey

Table I: Item Frequencies, General Health

<table>
<thead>
<tr>
<th>General Health</th>
<th>Pre-test Valid%* (N)</th>
<th>Pre-test (N)</th>
<th>Post-test Valid%* (N)</th>
<th>Post-test (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>5.2 (13)</td>
<td>4.2 (6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very good</td>
<td>13.5 (34)</td>
<td>23.2 (33)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>37.3 (94)</td>
<td>40.8 (58)</td>
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<tr>
<td>Fair</td>
<td>36.9 (93)</td>
<td>23.9 (34)</td>
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</tr>
<tr>
<td>Poor</td>
<td>7.1 (18)</td>
<td>7.7 (11)</td>
<td></td>
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</table>

*Does not include missing values
## Table II: Item Frequencies, Physical activity and Healthcare Utilization

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Valid%* (N)</td>
<td>Valid%* (N)</td>
</tr>
<tr>
<td><strong>Physical Activity</strong></td>
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<td></td>
</tr>
<tr>
<td>None</td>
<td>21.6 (52)</td>
<td>6.2 (9)</td>
</tr>
<tr>
<td>Less than 30 min/wk</td>
<td>19.5 (47)</td>
<td>18.5 (27)</td>
</tr>
<tr>
<td>30-60 min/wk</td>
<td>22.4 (54)</td>
<td>27.4 (40)</td>
</tr>
<tr>
<td>1-3 hrs/wk</td>
<td>16.2 (39)</td>
<td>22.6 (33)</td>
</tr>
<tr>
<td>More than 3 hrs/wk</td>
<td>20.3 (49)</td>
<td>25.3 (37)</td>
</tr>
<tr>
<td><strong>No. of physician visits in the past 6 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 visits</td>
<td>16.3 (40)</td>
<td>16.1 (23)</td>
</tr>
<tr>
<td>1-5 visits</td>
<td>70.2 (172)</td>
<td>76.2 (109)</td>
</tr>
<tr>
<td>6-10 visits</td>
<td>10.6 (26)</td>
<td>6.3 (9)</td>
</tr>
<tr>
<td>11-15 visits</td>
<td>1.2 (3)</td>
<td>1.4 (2)</td>
</tr>
<tr>
<td>16-20 visits</td>
<td>0.4 (2)</td>
<td></td>
</tr>
<tr>
<td>&gt;20 visits</td>
<td>1.2 (3)</td>
<td></td>
</tr>
<tr>
<td><strong>No. of ER visits in the past 6 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 visits</td>
<td>78.9 (195)</td>
<td>81.9 (118)</td>
</tr>
<tr>
<td>1-3 visits</td>
<td>16.6 (41)</td>
<td>17.4 (25)</td>
</tr>
<tr>
<td>4-6 visits</td>
<td>4.0 (10)</td>
<td>0.7 (1)</td>
</tr>
<tr>
<td>7-9 visits</td>
<td>0.0 (0)</td>
<td></td>
</tr>
<tr>
<td>10 or more visits</td>
<td>0.4 (1)</td>
<td></td>
</tr>
<tr>
<td><strong>No. of hospitalizations for 1 night or longer in the past 6 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 times</td>
<td>89.1 (220)</td>
<td>90.3 (130)</td>
</tr>
<tr>
<td>1-3 times</td>
<td>7.7 (19)</td>
<td>9.7 (14)</td>
</tr>
<tr>
<td>4-6 times</td>
<td>2.4 (6)</td>
<td></td>
</tr>
<tr>
<td>7-9 times</td>
<td>0.4 (1)</td>
<td></td>
</tr>
<tr>
<td>10 or more times</td>
<td>0.4 (1)</td>
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</tr>
<tr>
<td><strong>No. of total nights in the hospital in the past 6 months</strong></td>
<td></td>
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</tr>
<tr>
<td>0 nights</td>
<td>90.2 (222)</td>
<td>92.1 (129)</td>
</tr>
<tr>
<td>1-3 nights</td>
<td>5.3 (13)</td>
<td>3.6 (5)</td>
</tr>
<tr>
<td>4-6 nights</td>
<td>1.6 (4)</td>
<td>2.1 (3)</td>
</tr>
<tr>
<td>7-9 nights</td>
<td>0.4 (1)</td>
<td>2.1 (3)</td>
</tr>
<tr>
<td>10 nights</td>
<td>2.4 (6)</td>
<td>1.4 (2)</td>
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<td><strong>Hospitalizations at a skilled nursing facility, convalescent hospital, or other minimum care facility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12.8 (24)</td>
<td>10.9 (14)</td>
</tr>
<tr>
<td>No</td>
<td>87.2 (163)</td>
<td>89.1 (114)</td>
</tr>
<tr>
<td>Missing</td>
<td>82</td>
<td>22</td>
</tr>
</tbody>
</table>

*Does not include missing values
Appendix 2

The Impact of the Chronic Disease Self-Management Program on Elderly Residential Facilities’ Residents
Preliminary Findings

Zohre Salehezadeh, Naneida Lazarte Alcala
The Impact of the Chronic Disease Self-Management Program on Elderly Residential Facilitates’ Residents Preliminary Findings

Zohre Salehezadeh, PhD
Naneida Lazarte Alcala, PhD

Office of Planning, Research and Statistics
2013 ASA Conference
Chicago, IL
Introduction

- Objectives of this presentation
- Chronic Disease Self-Management Program (CDSMP)
- CDSMP in Oklahoma
  - Partnership
  - Program Reach and Participants
- Evaluation of the Chronic Disease Self-Management Program on the Elderly Residential Facilities’ Participants
- Conclusions
Objectives of this Presentation

Gain insight into:
1) Oklahoma Living Longer Living Stronger (LLLS) Partnership experience in successfully implemented CDSMP in various settings, including the community sites, correctional and nursing/residential facilities;
2) The indicators we used in the pre-post surveys to measure the impact of the CDSMP on workshop participants;
3) Whether the training has helped the facilities’ residents;
4) The lessons we learned from this study.
Chronic Disease Self-Management Program (CDSMP)

- CDSMP is a 6-week, small group intervention program for individuals with various chronic conditions.

- Provides information and teaches practical skills on managing chronic health problems and gives people the confidence and motivation they need to manage the challenges of living with a chronic health condition.

- It is a highly structured training, taught largely by peer instructors - lay leaders - and overseen by Master Trainers for fidelity.

- The instructor should closely adhere to the workshop manual, *Living a Healthy Life with Chronic Conditions*, developed by Dr. Kate Lorig (Stanford University).

- The program is based on the self-efficacy theory (confidence in ability to deal with health problems) and emphasizes problem solving, decision making, and building confidence.
CDSMP in Oklahoma
Target populations and their settings

- 60+ or living with chronic conditions
- Started with rural areas located in the Northern Oklahoma, then extended the program to urban areas of Central, and later to South and Southeast regions
- Low-income and high poverty rate:
  - Median income (65+ householders): $31,486
  - (Median income in OK 2010-general population: $42,072)
  - Poverty rate for 65+: 8.9%
    - (Rate in Oklahoma 2010- general population: 16.9%)
CDSMP in Oklahoma
The Living Longer, Living Stronger (LLLS) Partnership

- **Funder:**
  - U.S. Administration on Aging has funded this program since 2006.

- **Partners:**
  - Oklahoma Department of Human Services (OKDHS)
  - Oklahoma State Department of Health (OSDH)
    - Local County Health Departments
  - Oklahoma Department of Corrections (ODOC)
  - Oklahoma Health Care Authority (OHCA)
  - Area Agencies on Aging, local community-based and faith-based organizations (grant-funded and non-grant-funded)
Participants and Workshops To Date:

- Workshops: 330 (322 CDSMP; 8 DSMP)
- Participants: 3,796 (3,709 CDSMP; 87 DSMP)
- Sites: 140 (134 CDSMP; 7 DSMP)
- Master Trainers: 16 (10 active)
  - There are also 7 MTs who are not affiliated with the LLLS Partnership
- Lay-leaders: 339 (115 active; 224 inactive)

Grand Total Served: 4,151 Oklahomans have been trained since 2006
CDSMP Reach in Oklahoma

Living Longer, Living Stronger with Chronic Conditions
Workshop Sites, Participants, and Population over 65

Legend
- Workshop Site (n=90)

% Population 65+
- 9 - 13
- 14 - 15
- 16 - 17
- 18 - 19
- 20 - 22

Notes: Sites are located within the community and at Department of Corrections facilities. There have been 157 workshops in these 90 sites. Only community participants who listed a zip code are included. Data presented here is as of 08.02.2011. The number of LLLS participants (n=920) by county are provided when appropriate.

Created: 11.02.2011
Evaluation of the Chronic Disease Self-Management Program on the Residential Facilities’ Participants

- Research Questions
- Data Collections’ Tools, Methods and Timeframe
- Study Participants
- Pre/Post Survey
- Scale construction
- Findings
- Conclusions and next steps
The Research Questions

- There were some discussions among the grantee states about whether or not the program has any impact on the residential facilities’ participants.
- We did not find any report/research paper on this subject.
- The questions that we want to answer are:
  - What is the impact of the program on the participants’ health behavior, health status, and health care utilization?
  - How these outcomes compare to the outcomes observed in community workshops?
  - How the outcomes vary in different types of facilities?
Data Collection: Tools, Methods, Timeframe

- **Tools**
  - Participant demographic form: Registration Form
  - Consent form
  - Benefits (Outcome) Measures: CDSMP Pre/Post Surveys

- **Methods**
  - Paper-and-pencil self-administered questionnaires
  - The pre/post surveys are facilitated by the workshop instructors/research assistants

- **Timeframe**
  - Baseline surveys were conducted at the beginning of the workshop: September 2007/January 2008; September 2012
  - Follow-up surveys were conducted six months (on average) after the workshop was over
The Participants

- The 43 elderly people who participated in our study attended workshops in the northern rural areas of Oklahoma and in Tulsa Metro area.

<table>
<thead>
<tr>
<th>Site*</th>
<th># of Participants</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Living/SNF</td>
<td>6</td>
<td>14%</td>
</tr>
<tr>
<td>Independent Living Facility</td>
<td>31</td>
<td>72%</td>
</tr>
<tr>
<td>Independent Living/Assisted Living/SNF</td>
<td>6</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>100%</td>
</tr>
</tbody>
</table>

- The participants’ age varied greatly.
- Generally older and frailer participants than other community workshops’ attendees.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>78.54</td>
</tr>
<tr>
<td>Median</td>
<td>80.51</td>
</tr>
<tr>
<td>Minimum</td>
<td>29*</td>
</tr>
<tr>
<td>Maximum</td>
<td>100</td>
</tr>
<tr>
<td>Range</td>
<td>71</td>
</tr>
</tbody>
</table>

*SNF = Skilled-Nursing Facility
*One 29-year participant—who had advanced MS—lowered the average age.
The survey is comprised of the following items:

- Health status (15 items)
- Health behaviors (10 items)
- Health care utilization (5 item)

Items included in this study: 30

The pre/ post data was analyzed using various tests:

- Paired t-test, McNemar, and Wilcoxon Signed Rank related sample tests.
Measures

Three scales have been used:

- Self-management behaviors:
  
  1. Cognitive symptom management scale (6 items): When feeling bad or having pain, frequency of trying cognitive strategies: feeling distant from the discomfort, talking to self in positive ways, practice visualization, practice progressive muscle relaxation, playing mental games to keep the mind off the discomfort, and think of it like a warm, numb feeling.

  2. Communication with physician scale (3 items): When visiting a physician, frequency of preparing list of questions: preparing a list of questions, asking questions about things one doesn’t know/understand, and discussing personal problems related to the illness.
Measures

- Health status:
  (3) Disability (8 items): Difficulty/disability the respondents had with various day-to-day activities such as dressing, getting in and out of bed, eating, walking, hygiene, gripping, and similar activities. The items measure degrees of difficulties from “with no difficulty” to “with much difficulty” and “unable to do.”

- Other measures:
  - Self-rated health (single item)
  - Disability (single-item)
  - Energy/fatigue (single-item)
  - Health distress (two items)
  - Pain (single-item)
  - Shortness of breath (single item)
Measures

Other measures (Cont.):

- **Health care utilization:**
  - Visits to doctor, nurse, or health clinic (single-item)
  - Visits to emergency room (single-item)
  - Hospitalizations (single-item)
  - Nights in hospital (single-item)
## Summary Findings

<table>
<thead>
<tr>
<th>Measure</th>
<th>Number of Items</th>
<th>Mean: Baseline</th>
<th>Mean: 6-month follow up</th>
<th>Change in mean</th>
<th>P value</th>
<th>N</th>
<th>Improved/Worsened</th>
<th>Statistically significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1) Health Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived self as Disabled*</td>
<td>1</td>
<td>0.51</td>
<td>0.38</td>
<td>-0.13</td>
<td>0.03</td>
<td>37</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Health Distress</td>
<td>2</td>
<td>2.65/2.59</td>
<td>2.65/2.47</td>
<td>0.0/0.12</td>
<td>1.0/0.58</td>
<td>34</td>
<td>No change/Improved</td>
<td>N</td>
</tr>
<tr>
<td>Pain</td>
<td>1</td>
<td>4.65</td>
<td>4.24</td>
<td>-0.41</td>
<td>0.33</td>
<td>34</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>1</td>
<td>2.79</td>
<td>3.09</td>
<td>0.30</td>
<td>0.50</td>
<td>34</td>
<td>Worsened</td>
<td>N</td>
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<tr>
<td>Self-rated health</td>
<td>1</td>
<td>2.53</td>
<td>2.94</td>
<td>0.41</td>
<td>0.00</td>
<td>34</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Energy/Fatigue</td>
<td>1</td>
<td>3.12</td>
<td>3.12</td>
<td>0.00</td>
<td>1.00</td>
<td>34</td>
<td>No Change</td>
<td>N</td>
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<tr>
<td>Disability (scale)</td>
<td>8</td>
<td>1.31</td>
<td>1.31</td>
<td>0.00</td>
<td>0.89</td>
<td>42</td>
<td>No Change</td>
<td>N</td>
</tr>
<tr>
<td><strong>2) Health behaviors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aerobic Exercise (minutes/wk.)</td>
<td>1</td>
<td>116.79</td>
<td>117.86</td>
<td>1.07</td>
<td>0.87</td>
<td>42</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Cognitive Symptom Management (scale)</td>
<td>6</td>
<td>2.42</td>
<td>2.63</td>
<td>0.21</td>
<td>0.28</td>
<td>34</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Communication with physician</td>
<td>3</td>
<td>3.62</td>
<td>3.62</td>
<td>0.00</td>
<td>0.89</td>
<td>43</td>
<td>No Change</td>
<td>N</td>
</tr>
<tr>
<td>(scale)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3) Health care utilization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician/nurse practitioner/health clinic visits</td>
<td>1</td>
<td>2.79</td>
<td>3.72</td>
<td>0.93</td>
<td>0.67</td>
<td>39</td>
<td>Worsened</td>
<td>N</td>
</tr>
<tr>
<td>Emergency Dept. visits</td>
<td>1</td>
<td>0.48</td>
<td>0.23</td>
<td>-0.25</td>
<td>0.33</td>
<td>40</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Hospitalizations</td>
<td>1</td>
<td>0.29</td>
<td>0.12</td>
<td>-0.17</td>
<td>0.13</td>
<td>41</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Nights in hospital</td>
<td>1</td>
<td>1.02</td>
<td>0.37</td>
<td>-0.65</td>
<td>0.30</td>
<td>41</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Hospitalization at skilled nursing facility</td>
<td>1</td>
<td>0.12</td>
<td>0.02</td>
<td>-0.10</td>
<td>0.05</td>
<td>41</td>
<td>Improved</td>
<td>Y</td>
</tr>
</tbody>
</table>
I. Health Status Measures

Perceived self as disabled (n=37)
Statistically significant improvement

- The question was: Do you consider yourself to be a person with disability?
- The change in the mean was significant at 95% confidence level
I. Health Status Measures

Disability (n=42)

No change

- Disability scale (8 items): At this moment, are you able to do any of the following? Dress yourself; get in and out of bed; lift a full cup or glass to your mouth; walk outdoors on flat ground; wash and dry your entire body; bend down to pick up stuff from the floor; turn faucets on and off; get in and out of a car?
• Please choose the number that best describes your pain in the past 2 weeks (on a scale from zero to 10).
I. Health Status Measures

- How much time during the past 4 weeks, have you been feeling worn out?
• Please choose the number that best describes your shortness of breath in the past 2 weeks.
I. Health Status Measures

a) How much time during the past 4 weeks, have you been feeling worried about your health?

b) How much time during the past 4 weeks, were you fearful about your future health?
I. Health Status Measures

- Statistically significant improvement: Significance level 0.05
- Related samples test: Wilcoxon Signed Rank Test
The question was: 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 exercising? (Exercise includes stretching or strengthening exercises, swimming, walking, bicycling, using aerobic exercise equipment and lifting weights.)
II. Health Behaviors Measures

Cognitive symptom management (6): When feeling bad or having pain, frequency of trying cognitive strategies (e.g. feeling distant from the discomfort, talking to self in positive ways, practice visualization)
II. Health Behaviors Measures

Communication with physician (n=43)

No change

Communication with physician scale (3 items): When visiting a physician, frequency of preparing list of questions, asking questions about things one doesn’t know/understand, discussing personal problems related to illness
III. Health Care Utilization

Variables with mixed results

- Four out of five indicators showed reduction in health care utilization and one indicator got worse—the average number of times the participants visited a doctor, nurse practitioner, or a health clinic has increased during the four-month period prior to the baseline survey compared to the four-month period before the follow-up survey.
- Only change in the number of Hospitalization at skilled nursing facility was statistically significant.
Seniors in residential facilities benefit from participating in the program.

These programs are incredible ways to minimize the cost of improving people’s lives.

Next steps:
- Obtain a larger sample
- Discuss the findings with the instructors and see if the weak points could be improved
- Break down the analysis by type of residential facility
- Compare the impacts on the residential facilities participants with those on the community workshop participants and test whether the results are different
- Test whether the results hold between sub-groups
THANK YOU!

A special THANKS to the followings who have greatly helped with this study:

Candace Smith, Research Assistance
LLLS Grant Management: Zach Root, Alixa Lee, and Marisa New
Who assisted with the data collection process

And also

to Reena Shetty, Brandy Atkinson (Area Agency on Aging) and the workshops leaders and participants
Questions or Comments?

Contact information:

<table>
<thead>
<tr>
<th>Dr. Naneida Lazarte Alcala</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Researcher</td>
</tr>
<tr>
<td>Office of Planning, Research and Statistics</td>
</tr>
<tr>
<td>Oklahoma Department of Human Services</td>
</tr>
<tr>
<td>(405) 521-4175</td>
</tr>
<tr>
<td><a href="mailto:Naneida.LazarteAlcala@okdhs.org">Naneida.LazarteAlcala@okdhs.org</a></td>
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</table>

<table>
<thead>
<tr>
<th>Dr. Zohre Salehezadeh</th>
</tr>
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<tbody>
<tr>
<td>Research Manager</td>
</tr>
<tr>
<td>Office of Planning, Research and Statistics</td>
</tr>
<tr>
<td>Oklahoma Department of Human Services</td>
</tr>
<tr>
<td>(405) 521-4498</td>
</tr>
<tr>
<td><a href="mailto:Zohre.Salehezadeh@okdhs.org">Zohre.Salehezadeh@okdhs.org</a></td>
</tr>
</tbody>
</table>
Appendix 3

A Promising Practice: Oklahoma’s Success in Delivering an Evidence-Based Practice in the State Correctional Facilities

Zach Root, Zohre Salehezadeh
A Promising Practice: Oklahoma’s Success in Delivering an Evidence-Based Practice in the State Correctional Facilities

Zach Root, Grant Manager
Zohre Salehezadeh, PhD
2012 NAWRS/ NASTA Conference
Baltimore, MD
Introduction

Zach Root

Grant Manager

Aging Services Division

Oklahoma Department of Human Services

- Objectives
- Chronic Disease Self-Management Program (CDSMP)
- CDSMP in Oklahoma
  - Partnerships
  - Program Reach and Participants
- CDSMP in the Prison System
  - Trainers and Participants
  - Expected Benefits
Objectives of this Presentation

Gain insight into:
1) How Oklahoma has successfully implemented CDSMP into the prison system;
2) How the inmates at the Oklahoma Department of Corrections (ODOC) facilities across the State have benefitted from this program;
3) The challenges and obstacles faced along the way; and
4) What lessons we have learned from this process.
Chronic Disease Self-Management Program (CDSMP)

- Lay-led participant education program offered in communities in the United States and several other countries
- Participants are adults experiencing chronic health conditions such as hypertension, arthritis, heart disease, stroke, lung disease, and diabetes (family members, friends and caregivers can also participate)
- Provides information and teaches practical skills on managing chronic health problems
- Gives people the confidence and motivation they need to manage the challenges of living with a chronic health condition
CDSMP in Oklahoma
Target populations and their settings

- 60+ or living with chronic conditions
- Started with rural areas located in the Northern, Central, South and Southeast regions, then extended the programs to urban and other areas
- Low-income and high poverty rate:
  - Median income (65+ householders): $31,486
    - (Median in OK 2010-general population: $42,072)
  - Poverty rate for 65+: 8.9%
    - (Rate in Oklahoma 2010- general population: 16.9%)
CDSMP in Oklahoma

Our partners

- Funder: U.S. Administration on Aging
- Oklahoma Department of Human Services (OKDHS)
- Oklahoma State Department of Health (OSDH)
  - Local County Health Departments
- Oklahoma Department of Corrections (ODOC)
- Oklahoma Health Care Authority (OHCA)
- Area Agencies on Aging, local community-based and faith-based organizations (grant-funded and non-grant-funded)
Participants and Workshops To Date:

- **ODOC CDSMP:**
  - Workshops: 164
  - Participants: 1,999
  - Sites: 12

- **Non-ODOC CDSMP:**
  - Workshops: 127
  - Participants: 1,403

Grand Total Served: 3,402 participants since 2006
Living Longer, Living Stronger with Chronic Conditions
Workshop Sites, Participants, and Population over 65

Legend
--orange- Workshop Site (n=90)
% Population 65+
- white - 9 - 13
- light green - 14 - 15
- green - 16 - 17
- dark green - 18 - 19
- dark blue - 20 - 22

Notes: Sites are located within the community and at Department of Corrections facilities. There have been 167 workshops in these 90 sites. Only community participants who listed a zip code are included. Data presented here is as of 08.02.2011. The number of LLLS participants (n=920) by county are provided when appropriate.

Created: 11.02.2011
CDSMP Workshop Participants’ Race

Community Workshop Participants: 1,403
DOC Workshop Participants: 1,999

NOTE: 151 of respondents indicated they are of Hispanic or Latino descent
Incarceration is like a chronic condition with its own set of stressors

- "Inmates don't come to us in good health to start with", Director Justin Jones said. "After years of substance abuse, when they get into their mid-50s, they have an array of chronic illnesses."

Different approaches needed with leaders

“Prison Culture” and earning the respect and trust of the participants

Security procedures
CDSMP in the Prison System
(Workshop trainers and target population)

- ODOC obtained a Stanford CDSMP license
- Offenders and community volunteers were trained
- LLLS Master Trainer oversees workshops and provides fidelity monitoring and program updates
- 2011 Annual ODOC Report:
  - In 1980, the system had 85 inmates who were age 50 and older, a figure that has grown to 3,824 in 2011 (2011 Annual DOC Report)
  - The projected population aged 50 years or older is expected to be 5,254 by fiscal year 2013, a 48 percent increase, while the overall offender population is expected to grow 10 percent.
How are inmates recruited to the program?
- Referrals by Medical Staff
- Automatic selection due to certain illnesses
- Age (60+)
- “Request of Staff” initiated by inmate (for all of the above)

Waiting list

Orientation for new prisoners

Selection of inmate leaders

Workshop size is limited to 16 participants with facilities conducting as many as 6 workshops/week
Participants are encouraged to practice self efficacy

- Apply positive life style principals to relationships with family members and loved ones,
  - Focus phone calls on positive achievements
  - Include healthy life lessons when writing letters
  - Discuss concerns over loved ones’ health and wellness during visits
  - Take the focus off self and utilize materials from the workshops to encourage loved ones to seek wellness

- Problems that develop as a result of a chronic condition tend to dwindle as the workshop progresses
Expected Benefits to Department of Corrections

- Offenders who are aware of healthcare role
- Offenders who are solution-oriented
- Offenders aware their actions create +/- outcomes
- Reduction in write-ups and misconducts
- An offender with a positive action plan for his/her life
- Reduced staff stress and anxiety
- Increased offender releases, reduced staff turn-over
Expected Benefits to the State of Oklahoma

- Individuals who promote the need for self-awareness through self-efficacy and self-advocacy
- A possible reduction in the cost of ODOC Medical care for long term offenders
- Offenders who have been certified and conducted workshops will be available to serve their communities after release
Evaluation of the Chronic Disease Self-Management Program on the ODOC Participants

Zohre Salehezadeh, PhD
Research Manager
Oklahoma Department of Human Services
Office of Planning, Research and Statistics

- Research Questions
- Intervention
- Data Collections’ Tools, Methods and Timeframe
- Study Participants
- Pre/Post Survey
- Scale construction
- Findings
- Conclusions and next steps
Inspired by the anecdotal stories from the instructors about amazing things happening in various ODOC sites that were beyond the program expectations, we decided to conduct a study to examine the effects of CDSMP on this population.

**Research Questions:**

- What is the impact of the Program on the participants’ health behavior, self-efficacy, health status, and diet?
- What is the impact on medical services utilization?
- What is the impact on participants’ social behavior?
- How these outcomes compare to the outcomes observed in community workshops?

The research proposal involving inmates (human subjects) was approved by the Independent Review Board of the Oklahoma City University.
The Intervention

- CDSMP is a 6-week, small group intervention program for individuals with various chronic conditions.

- It is a highly structured training, taught largely by peer instructors - lay leaders - and overseen by Master Trainers for fidelity.

- The instructor should closely adhere to the workshop manual, *Living a Healthy Life with Chronic Conditions*, developed by Dr. Kate Lorig (Stanford University).

- The program is based on the self-efficacy theory (confidence in ability to deal with health problems) and emphasizes problem solving, decision making, and building confidence.
Data Collection: Tools, Methods, Timeframe

**Tools**

- Program Quality (Process) Measures
  - Participant demographic form (i.e., Registration Form)
  - Participant Satisfaction Survey
  - Attendance Sheet
  - Fidelity Checklist
- Benefits (Outcome) Measures (focus of this presentation)
  - CDSMP Pre/Post Surveys
  - ODOC Administrative data (Pre/Post data)

**Methods**

- All tools are self-administered
- Paper & pen surveys
- The pre/ post surveys are conducted by the workshop instructors


- Baseline survey was conducted in the beginning of the workshop
- Follow-up surveys:
  - On the last session; four months and six months after the workshop
### The Participants

- The 231 inmates who participated in our study attended workshops in three ODOC minimum security sites from Dec. 2011 through June 2012:

<table>
<thead>
<tr>
<th>Site</th>
<th># of Participants</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Clara Waters Correctional Center</td>
<td>11</td>
<td>4.8</td>
</tr>
<tr>
<td>Eddie Warrior (female’s facility)</td>
<td>80</td>
<td>34.6</td>
</tr>
<tr>
<td>Jess Dunn</td>
<td>140</td>
<td>60.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>231</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

- The participants’ age varied greatly.
- Generally much younger population than community workshops’ participants (68 yrs.)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Mean Age</strong></td>
<td>37.7</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>36.2</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>20.1</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>67.4</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>47.4</td>
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</table>
### The Participants
### Other Demographic Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th># of participants</th>
<th>% of Total*</th>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>80</td>
<td>34.6</td>
</tr>
<tr>
<td>Male</td>
<td>151</td>
<td>65.4</td>
</tr>
<tr>
<td><strong>Race/ Ethnicity</strong></td>
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<td></td>
</tr>
<tr>
<td>White</td>
<td>115</td>
<td>49.8</td>
</tr>
<tr>
<td>Black</td>
<td>63</td>
<td>27.3</td>
</tr>
<tr>
<td>American Indian</td>
<td>37</td>
<td>16.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>17</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>Chronic Conditions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arthritis</td>
<td>25</td>
<td>10.8</td>
</tr>
<tr>
<td>Breathing</td>
<td>33</td>
<td>14.3</td>
</tr>
<tr>
<td>Cancer</td>
<td>6</td>
<td>2.6</td>
</tr>
<tr>
<td>Depression</td>
<td>75</td>
<td>32.5</td>
</tr>
<tr>
<td>Diabetes</td>
<td>15</td>
<td>6.5</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>8</td>
<td>3.5</td>
</tr>
<tr>
<td>Hypertension</td>
<td>41</td>
<td>17.7</td>
</tr>
<tr>
<td>Stroke</td>
<td>4</td>
<td>1.7</td>
</tr>
<tr>
<td>Other Chronic Conditions</td>
<td>25</td>
<td>10.8</td>
</tr>
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</table>

Missing data is not reported here.
The survey is comprised of 36 items:
- Health status (9 items)
- Health behaviors (9 items)
- Health care utilization (1 item)
- Outlook on life (8 items)
- Social behavior (1 item)
- Diet and overall feelings/mood (6 items)-not covered in this presentation

ODOC official pretested the survey with peer educators to check the sensibility of the wording and length.

An incentive was offered to those who responded to our surveys.

The survey responses were entered into a database.

We also received pre/post ODOC administrative Data.

The pre/post data was analyzed using various tests:
- Paired t-test, McNemar, and Wilcoxon Signed Rank related sample tests.
Construction of Scales

- **Four scales have been created** (highlighted in orange in the next slide’s table)

- **1) Health distress (4 items, Cronbach’s alpha=.74)**
  - assesses the amount of time the participant has been concerned about health (worried, fearful) or had related symptoms (felt worn out, lack of energy)

- **2) Cognitive symptom management (6 items, Cronbach's Alpha= .72)**
  - When feeling miserable or in pain, frequency of using relaxation techniques (e.g., feeling distance from discomfort, talking to self in positive ways, practice progressive muscle relaxation, etc.) taught in class.

- **3) Communication with physician (3 items, Cronbach's Alpha= .77)**
  - When visiting a physician, frequency of preparing list of questions, asking questions about things one doesn’t know/understand, discussing personal problems related to illness

- **4) Being hopeful (7 items, Cronbach's Alpha= .75)**
  - This scale is used to measure self-efficacy and goal-directed thinking-the items measure degree of agreement on a series of statements related to one’s view on life (e.g., having reasons to be hopeful about the future, feeling prepared for the future, and meeting the goals a person set for self, etc.)
## The Findings

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Baseline</th>
<th>Mean 6-wk follow up</th>
<th>Change in mean</th>
<th>P value</th>
<th>N</th>
<th>Improved/worsened</th>
<th>Statistically significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1) Health Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability</td>
<td>1.33</td>
<td>1.31</td>
<td>-0.02</td>
<td>0.49</td>
<td>222</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Health Distress (scale)</td>
<td>2.85</td>
<td>2.76</td>
<td>-0.09</td>
<td>0.04</td>
<td>231</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Worn out</td>
<td>2.79</td>
<td>2.67</td>
<td>-0.12</td>
<td>0.02</td>
<td>230</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Out of energy*</td>
<td>2.51</td>
<td>2.31</td>
<td>-0.20</td>
<td>0.04</td>
<td>109</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Worried</td>
<td>2.82</td>
<td>2.85</td>
<td>0.03</td>
<td>0.71</td>
<td>231</td>
<td>Worsened</td>
<td>N</td>
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<tr>
<td>Fearful</td>
<td>2.98</td>
<td>2.95</td>
<td>-0.03</td>
<td>0.69</td>
<td>230</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Pain</td>
<td>2.21</td>
<td>2.11</td>
<td>-0.10</td>
<td>0.12</td>
<td>231</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>1.90</td>
<td>1.95</td>
<td>0.05</td>
<td>0.42</td>
<td>231</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Stress</td>
<td>2.97</td>
<td>2.99</td>
<td>-0.02</td>
<td>0.70</td>
<td>231</td>
<td>Worsened</td>
<td>N</td>
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<tr>
<td>Self-rated health</td>
<td>3.26</td>
<td>3.37</td>
<td>0.11</td>
<td>0.02</td>
<td>190</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Weight (ODOC Admin data)</td>
<td>191.00</td>
<td>187.20</td>
<td>-3.80</td>
<td>0.08</td>
<td>231</td>
<td>Improved</td>
<td>N</td>
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<tr>
<td>Blood pressure (ODOC Admin data)</td>
<td>102.20</td>
<td>102.50</td>
<td>0.30</td>
<td>0.86</td>
<td>231</td>
<td>Worsened</td>
<td>N</td>
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<tr>
<td><strong>2) Health behaviors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise</td>
<td>3.39</td>
<td>3.84</td>
<td>0.45</td>
<td>0.00</td>
<td>192</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Cognitive Symptom Management (scale)</td>
<td>2.48</td>
<td>2.67</td>
<td>0.25</td>
<td>0.00</td>
<td>228</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Feel distant</td>
<td>2.36</td>
<td>2.40</td>
<td>0.04</td>
<td>0.54</td>
<td>228</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Don’t think of it as discomfort</td>
<td>2.04</td>
<td>1.99</td>
<td>-0.04</td>
<td>0.55</td>
<td>227</td>
<td>Worsened</td>
<td>N</td>
</tr>
<tr>
<td>Engage in mental exercises</td>
<td>2.40</td>
<td>2.67</td>
<td>0.27</td>
<td>0.00</td>
<td>228</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Progressive muscle relax.</td>
<td>2.14</td>
<td>2.59</td>
<td>0.45</td>
<td>0.00</td>
<td>227</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Practice visualization</td>
<td>2.61</td>
<td>2.98</td>
<td>0.37</td>
<td>0.00</td>
<td>228</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Talk to yourself</td>
<td>3.00</td>
<td>3.41</td>
<td>0.42</td>
<td>0.00</td>
<td>228</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Communication with physician (scale)</td>
<td>2.68</td>
<td>3.00</td>
<td>0.32</td>
<td>0.00</td>
<td>228</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Prepare a list</td>
<td>2.04</td>
<td>2.39</td>
<td>0.34</td>
<td>0.00</td>
<td>227</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Ask questions</td>
<td>3.11</td>
<td>3.36</td>
<td>0.26</td>
<td>0.00</td>
<td>228</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Discuss pres. problems</td>
<td>2.89</td>
<td>3.26</td>
<td>0.37</td>
<td>0.00</td>
<td>228</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td><strong>3) Health care utilization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of medications</td>
<td>1.54</td>
<td>1.42</td>
<td>-0.12</td>
<td>0.10</td>
<td>223</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Number of prescriptions (ODOC Admin data)</td>
<td>3.62</td>
<td>3.06</td>
<td>-0.56</td>
<td>0.00</td>
<td>115</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Number of visits to medical facility(ODOC Admin data)</td>
<td>2.24</td>
<td>1.14</td>
<td>-1.10</td>
<td>0.00</td>
<td>115</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td><strong>4) Outlook on life</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being hopeful (scale)</td>
<td>3.66</td>
<td>3.90</td>
<td>0.24</td>
<td>0.00</td>
<td>229</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Positive</td>
<td>4.16</td>
<td>4.39</td>
<td>0.23</td>
<td>0.00</td>
<td>229</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Optimistic</td>
<td>3.88</td>
<td>3.98</td>
<td>0.10</td>
<td>0.09</td>
<td>225</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Not worrying*</td>
<td>2.00</td>
<td>2.19</td>
<td>0.19</td>
<td>0.01</td>
<td>226</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Meet goals</td>
<td>3.44</td>
<td>3.78</td>
<td>0.33</td>
<td>0.00</td>
<td>227</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Use mind, Make change</td>
<td>3.97</td>
<td>4.11</td>
<td>0.14</td>
<td>0.02</td>
<td>227</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>What I need, Reach goals</td>
<td>4.16</td>
<td>4.57</td>
<td>0.41</td>
<td>0.07</td>
<td>226</td>
<td>Improved</td>
<td>N</td>
</tr>
<tr>
<td>Prepared for future</td>
<td>3.65</td>
<td>3.96</td>
<td>0.31</td>
<td>0.00</td>
<td>228</td>
<td>Improved</td>
<td>Y</td>
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<tr>
<td>Overall happiness</td>
<td>3.74</td>
<td>4.04</td>
<td>0.30</td>
<td>0.00</td>
<td>217</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td><strong>5) Social Behavior</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Institutional misconduct (ODOC Admin data)</td>
<td>0.05</td>
<td>0.01</td>
<td>-0.03</td>
<td>0.00</td>
<td>115</td>
<td>Improved</td>
<td>Y</td>
</tr>
<tr>
<td>Social tolerance</td>
<td>3.74</td>
<td>3.81</td>
<td>0.07</td>
<td>0.00</td>
<td>223</td>
<td>Improved</td>
<td>Y</td>
</tr>
</tbody>
</table>

21 (60%) out of 35 variables measured showed statistically significant improvements.
The health distress scale (4 items) assesses the amount of time the participant has been concerned about health (worried, fearful) or had related symptoms (felt worn out, lack of energy). Self-rated health (one item)
Health Status

Measures that showed improvements but were not statistically significant
Health Status
Administrative Data
Mixed results but none were statistically significant

Bar chart showing mean (Baseline) and mean (6-wk follow up) for weight and blood pressure.
Health Status
Measures that worsened but were not statistically significant

![Graph showing measures of health status with mean values at baseline and 6-week follow-up.](image)
Communication with physician scale (3 items): When visiting a physician, frequency of preparing list of questions, asking questions about things one doesn’t know/understand, discussing personal problems related to illness

Cognitive symptom management scale (6 items): When feeling miserable or in pain, frequency of using relaxation techniques (e.g., feeling distance from discomfort, talking to self in positive ways, practice progressive muscle relaxation, etc.) taught in class.
Outlook on Life
Variables with statistically significant improvements

Being hopeful scale (7 items): This scale is used to measure self-efficacy and goal-directed thinking—the items measure degree of agreement on a series of statements related to one’s view on life (e.g., having reasons to be hopeful about the future, feeling prepared for the future, and meeting the goals a person set for self, etc.)
Number of visits to medical facility and prescriptions are ODOC Administrative data. Number of medications was self-reported, collected through the survey. The three indicators showed reduction in utilization, but changes only in the first two variables were statistically significant.
Social Behavior

Variables with statistically significant improvements

- The Social Tolerance data is collected from the survey
- The data on Institutional Misconduct is from ODOC Administrative database
Conclusions & Next Steps

- The results indicate that there are more benefits to the participants than were originally intended.
- These programs are incredible ways to minimize the cost of improving people’s lives.
- We should try to identify and remove any barriers and encourage participation in other health programs.
- Next steps:
  - Discuss the findings with the instructors and see if the weak points could be improved
  - Compare the impacts on the ODOC participants with those on the community workshop participants and test whether the results are different
  - Analyze longer term effects: in 4 months and 6 months following the workshops
  - Test whether the results hold between sub-groups
THANK YOU!

A special THANKS to the following OKDHS staff who have greatly helped with this study:

Naneida Lazarte Alcala, PhD
Senior Researcher

Candace Smith, Research Assistance

Tosha Robinson, Research Assistance

And to

ODOC Management: Dr. Spector, Dr. Sutmiller and his staff

OSDH staff: David Lee (CDSMP Master Trainer) & Marisa New
Who managed the data collection process

And to Dr. Mahmood Shandiz who assisted with the IRB approval process
Questions or Comments?

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<table>
<thead>
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</tr>
</thead>
<tbody>
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</table>
Appendix 4

Chronic Disease Self-Management Program and EnhanceFitness

Zach Root, Zohre Salehezadeh, David Lee
Collaboration Brings Prosperity: The Living Longer, Living Stronger Partnership

Chronic Disease Self Management Program and EnhanceFitness

Zach Root
Dr. Zohre Salehezadeh
David Lee
Aging in America Conference
San Francisco, April 2011
Introduction

Zach Root, Grant Manager
Aging Services Division
Oklahoma Department of Human Services

- Objectives
- AoA Grants & Our programs
- Chronic Disease Self-Management Program (CDSMP)
- Diabetes Self Management Program (DSMP)
- Enhance Fitness Program
- Partnerships
- Data and demographics
Objectives of This Presentation

1) How Oklahoma has been successful in bringing together a broad range of public, private, and local organizations to implement Living Longer, Living Stronger (LLLS), a thriving evidence-based disease management program over the last 5 years;

2) How the partnership led to positive health outcomes and increased knowledge of community resources;

3) How existing and new partnerships can lead to social and economic benefits beyond the intended outcomes of the program; and

4) How the partnership is breaking new ground in implementing the CDSMP component into the correctional system.
AoA Grants

- Empowering Older People to Take More Control of their Health Through Evidence-Based Prevention Programs
  - Project start date: 09/30/06

- American Recovery and Reinvestment Act Communities Putting Prevention to Work: Chronic Disease Self-Management Program
  - Project start date: 03/31/10
Our Programs

- Participants and Workshops To Date:
  - Chronic Disease Self Management Program (CDSMP)
    - Workshops: 138
    - Participants: 1,573
  - Diabetes Self Management Program (DSMP)
    - Workshops: 3
    - Participants: 33
  - EnhanceFitness (EF)
    - Sites: 25
    - Participants: 838
- Grand Total Served: 2,444 participants since 2006
Chronic Disease (CDSMP) and Diabetes (DSMP) Self Management Programs

- Lay-led participant education program offered in communities in the United States and several other countries.
- Participants are adults experiencing chronic health conditions such as hypertension, arthritis, heart disease, stroke, lung disease, and diabetes (family members, friends and caregivers can also participate)
- Provides information and teaches practical skills on managing chronic health problems
- Gives people the confidence and motivation they need to manage the challenges of living with a chronic health condition
- DSMP focuses primarily on diabetes but follows the same methods used for CDSMP
EnhanceFitness (EF)

- Low-cost, evidence-based group physical activity program developed specifically for older adults
- Packaged into a formal regimen focusing on four key areas important to the health and fitness of mature participants:
  - stretching and flexibility
  - low impact aerobics
  - strength training
  - balance
- Three times a week, an hour each session, providing social stimulation as well as physical benefits
Our State and County Government Partners

- Oklahoma Department of Human Services (OKDHS)
  - Aging Services Division (ASD)
  - Office of Planning, Research and Statistics (OPRS)
- Oklahoma State Department of Health (OSDH)
  - Local County Health Departments
- Oklahoma Department of Corrections (ODOC)
- Oklahoma Health Care Authority (OHCA)
Our Local Community Partners

Area Agencies on Aging
- Areawide (OKC, OK) (CDSMP/DSMP)
- ASCOG (Southwestern OK) (CDSMP)
- COEDD (Central OK) (EF)
- EODD (Eastern OK) (CDSMP)
- INCOG (Tulsa, OK) (CDSMP)
- KEDDO (Southeastern OK) (EF)
- NODA (Northern OK) (CDSMP/DSMP)
Chickasaw Nation (EF)
National Caucus and Center on Black Aged (CDSMP)

Local Community Organizations
- KANP (EF)
- Project H.E.A.R.T. (EF)
- Project Wheatheart (CDSMP)
Mary Mahoney Health Centers (CDSMP)
- OK Community Health Centers
- City Church
- Healthy Start
- Central OK Integrated Network System
The Education and Employment Ministry
Target Population and Their Settings

- Target population and their settings:
  - 60+ or living with chronic conditions
  - Started with rural areas located in the Northern, Central, South and Southeast regions, then extended the programs to urban and other areas
  - Low-income and high poverty rate:
    - Median income (65+ householders): $31,028
      - (Median in OK 2009-general population: $45,878)
    - Poverty rate for 65+: 9%
      - (Rate in Oklahoma 2009- general population: 16.2%)
### Racial composition of 60+ in Oklahoma:

*American Community Survey (ACS) Demographic Data (2004-2009)*

<table>
<thead>
<tr>
<th></th>
<th>Am. Indian</th>
<th>Asian Am./ Pac. Isl. / Hawaiian</th>
<th>Black</th>
<th>Hispanic / Latino</th>
<th>White</th>
<th>2+ races</th>
<th>Other</th>
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<tbody>
<tr>
<td><strong>4.1%</strong></td>
<td><strong>1.0%</strong></td>
<td><strong>4.7%</strong></td>
<td><strong>2.8%</strong></td>
<td><strong>83.9%</strong></td>
<td><strong>3.8%</strong></td>
<td><strong>0.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Actual racial composition of participants in LLLS:

<table>
<thead>
<tr>
<th></th>
<th>Am. Indian</th>
<th>Asian Am./ Pac. Isl. / Hawaiian</th>
<th>Black</th>
<th>Hispanic / Latino</th>
<th>White</th>
<th>2+ races</th>
<th>Other</th>
<th>Missing / Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8.2%</strong></td>
<td><strong>1.3%</strong></td>
<td><strong>15.4%</strong></td>
<td><strong>3%</strong></td>
<td><strong>60.7%</strong></td>
<td><strong>3.6%</strong></td>
<td><strong>1.3%</strong></td>
<td><strong>7.4%</strong></td>
<td></td>
</tr>
</tbody>
</table>
Program Capacity

- Numbers of CDSMP Master Trainers (MT)/Lay Leaders (LL)
  - Master Trainers: 6 in the state (2 cross-trained for DSMP)
  - Lay Leaders: 154 in the state

- Numbers of EF Master Trainers and instructors
  - Master Trainers: 3
  - Instructors: 33

- Success in recruiting MT/LL
  - Recruitment: we offer free LL training to all those who commit to teach a class

- Although this has been a challenging program but we have been able to build the infrastructure needed to keep expanding our programs across the state
Evaluation of the Evidence-Based Programs

Zohre Salehezadeh, PhD
Research Manager
Oklahoma Department of Human Services
Office of Planning, Research and Statistics

- Research Questions
- Data Sources
- Data Collections’ Tools, Methods and Timeframe
- Outcomes
  - EF Pre-Post Surveys & Fitness Checks
  - CDSMP Pre-Post Surveys
  - CDSMP Recent Survey
- Summary Findings & Recommendations
Outcomes that Resulted from Collaboration

- How the partnership led to positive health outcomes and increased knowledge of community resources
- How existing and new partnerships can lead to social and economic benefits beyond the intended outcomes of the program
Data Sources

- Three sources of data:
  - 1) EF fitness checks outcomes
     - Tests at the beginning of the class, four months, and on one-year mark
  - 2) CDSMP pre-post data
     - Surveys at the beginning of the workshop and six months later
  - 3) Outcomes from a recent survey of CDSMP participants
     - Surveys were mailed to a random sample of previous workshop participants

- Paired t-test, McNemar, and Wilcoxon Signed Rank related sample tests were used to evaluate the pre-post data in the first two sets of data.
Data Collection Tools, Methods, & Timeframe:
EF – Fitness Checks Data

- Pre-post data- Two sections:
- Section one- Participant responds
  - Self-rating of health in general
  - Self-rating of physical abilities
  - Number of falls over previous 4 months
  - Days per week of physical activity
- Section two- Instructor checks physical ability
  - Chair stand (# of stands in 30 seconds)
  - Arm curl and weight lift (# of reps in 30 second & amount of weight used in lifting)
  - 8-foot up & go (# of seconds to complete one circuit)
  - Some other optional tests (not reported here)
- Timeframe: Data covers June 2007 - December 2010
The survey included data on 9 categories:

- Disease Self-Management (6 items)
- Exercise/Physical Activity (5 items)
- Communication Skills with Physician (3 items)
- Self-rating of health in general (1 item)
- Difficulty to do Daily Chores (8 items)
- Outlook on Life (4 items)
- Symptoms (2 items)
- Perceived Self as Disabled (1 item)
- Health Care Utilization (5 items)

Timeframe: Data covers May 2007 - December 2009
The surveys were mailed to a random sample of 220 individuals who have participated in a CDSMP workshop from May 2007 to July 2010.

We offered an incentive- $10 gift card for responding to our survey.

The Survey instrument consisted of 9 items:
- 7 multiple-choice items
- 2 open-ended questions

The surveys were mailed in January and February of 2011.

We received 58 surveys back-a response rate of 26.4%
Outcomes:
EF Pre- Post Surveys and Fitness Checks
Enhanced Fitness Program Outcome
Self-rating of health in general (N=279)
Enhanced Fitness Program Outcome

Self-rating Improvement in physical abilities (N=279)
Enhanced Fitness Program Outcome
Number of falls, resulting medical care, & physical activity (N=279)

- Change in the number of falls over the previous 4 months was negligible

- Number of “yes”, the fall resulted in an injury that required medical care increased from 4 to 8 cases

- Change in days per week of physical activity was also negligible
The improvements in the physical checks were statistically significant.

- Chair stand (# of stands in 30 seconds)
  - Mean difference: 2.01
  - N = 271 (t = 8.59)

- Arm curl (# of reps in 30 seconds)
  - Mean difference: 3.59
  - N = 274 (t = 9.61)

- 8-foot up & go (# of seconds to complete the circuit)
  - Mean difference: -0.56
  - N = 276 (t = -2.7)
Outcomes:

CDSMP Pre-Post Surveys
CDSMP Pre-Post Survey

Percent Change in the Mean (from Pre to Post)
CDSMP Pre-Post Survey

Percent Change in the Mean (from Pre to Post)

- Difficulty to Do Daily Chores: 3.87%
- Symptoms: 1.19%
- Number of Medications: 15.15%
CDSMP Pre-Post Survey
Percent Change in the Mean (from Pre to Post)
Outcomes:

CDSMP Recent Survey
Are you continuing to use the techniques you learned in the workshop?

Technique N=58

- Yes: 79%
- No: 6.90%
- Blank/NA: 13.80%
- 0%
Since attending the workshop, have you been able to participate in social activities…

![Bar graph showing participation in social activities](image)
Since attending the workshop, have you visited a doctor, a health clinic, or an emergency room...

Doctor's Visits N=58

- More Often: 53%
- About the Same: 21%
- Less Often: 10%
- Blank/NA: 16%
While attending the workshop, did you learn about other community resources?

- Yes: 72%
- No: 19%
- Blank/NA: 9%

[Graph showing the distribution of responses]
What resources did you learn about during the CDSMP workshop?

- Physical Activities: 57%
- Respite care: 38%
- Public Transportation: 45%
- Housing resources: 16%
- Public safety programs: 17%
- Other resources: 0%

Resources N=58
Since attending CDSMP workshop, what resources have you utilized?

Resources Utilized N=33
- Physical Activities: 24%
- Public Transportation: 18%
- Health Services: 12%
- Social/Leisure: 9%
- Public Safety: 9%
- Seniors Center: 6%
- Other: 6%
- Nothing/Too Busy: 0%

Total N=33
Were you employed before attending the CDSMP workshop?

Employment Status N=58

- Yes: 74%
- No: 16%
- Blank/NA: 10%
Were you able to get a job after attending the CDSMP workshop?

- Yes: 67%
- No: 29%
- Blank/NA: 3%

Employment Since N=58
Beneficial effects that were unexpected since attending the CDSMP workshop (open-ended)

Benefits Since N=21
- Improved Diet: 29%
- Controlling Pain/Depression with Exercise: 26%
- Discussion/Fellowship with Others: 16%
- Exercise/Meditation: 10%
- Social/Lesisure Activities: 11%
- Time Management: 11%
- Positive Outlook/Self-Esteem: 5%
- VA Hospital/Clinic: 0%
Do you participate in any other health programs in your community?

- Yes: 38%
- No: 50%
- Blank/NA: 12%

Health Programs N=58
Barriers to participating in health programs.

- Don't know of any: 53%
- Not enough information: 27%
- Not recommended by doctor: 73%
- Class meets during day: 20%
- Have car_can't afford gas: 33%
- Don't know anyone: 80%
- Other priorities: 73%
- Family: 33%
- Can't afford it: 67%
- Other: 47%

Barriers N=45
The results indicate that there are more benefits to the participants than were originally intended.

These programs are incredible ways to minimize the cost of maximizing people’s lives.

Even though not all changes were in the right direction or statistically significant, we need to remember that considering the age of participants, their chronic conditions, and the fact that they are getting older and frailer, these outcomes are not surprising.

We should try to identify and remove the barriers and encourage participation in other health programs.

Future research: we plan to conduct a cost-benefit analysis in order to evaluate the dollar value of the benefits to the community from these programs.
CDSMP and the Oklahoma Department of Corrections

Pastor David Lee, Master Trainer
Faith-Based Health Enhancement Consultant
Health Equity and Resource Opportunities (HERO)
Oklahoma State Department of Health

- Breaking New Ground in OK Department of Corrections
- How ODOC Workshops Works
- How the Partnership Works
- Benefits to ODOC and the State
- Future Partnerships
Breaking New Ground in OK Department of Corrections

- ODOC obtained a Stanford CDSMP License
- Offenders and Community Volunteers were Trained
- ODOC Medical refers patients 60+ with chronic conditions to the CDSMP/LLLS Program
- General population 60+ with Chronic Conditions apply to Case Managers, put on waiting list
- LLLS M-Trainees oversee workshops and provide Fidelity Monitoring and program updates
- Workshop size is limited to 16 participants with facilities conducting as many as 6 workshops/week
In 1980, the system had 85 inmates who were age 50 and older, a figure that has grown to 3,952 in 2010, according to the report.

"The projected population aged 50 years or older is expected to be 5,254 by fiscal year 2013, a 48 percent increase, while the overall offender population is expected to grow 10 percent,"

"Inmates don't come to us in good health to start with”, Director Justin Jones said. "After years of substance abuse, when they get into their mid-50s, they have an array of chronic illnesses."
“Older prisoners are more likely to have health problems”

“...not only will the number of older prisoners increase by as much as tenfold, the medical resources to maintain current services will need to increase by double that. Consequentially, a potential twentyfold increase in medical resources will be required within the next 10 years - this is not exclusive to Oklahoma.”
Workshops are conducted per Stanford Guidelines
Emphasis is made on the relationship between the Symptom Cycle, and Self Efficacy
Action Plans are encouraged around reducing Stress, Anxiety, Healthy Eating and Difficult Emotions
Communication Skills are emphasized each session
Group Recognition is given for every positive effort
Problem solving steps are utilized at every opportunity
Rewarding ourselves for personal achievements
How the Partnership Works

- Participants are encouraged to practice self efficacy
  - a) apply positive life style principals to relationships with family members and loved ones,
  - b) focus phone calls on positive achievements
  - c) include healthy life lessons when writing letters
  - e) discuss concerns over loved ones’ health and wellness during visits
  - f) take the focus off self and utilize materials from the workshops to encourage loved ones seek wellness
Benefits to Dept. of Corrections

- A program that addresses rising healthcare cost
- A program that focuses on any chronic illness
- Offenders who are aware of their healthcare role
- Offenders who are solution oriented
- Offenders aware their actions create +/- outcomes
- Reduction in write-ups and misconducts
- An offender with an Action Plan for his/her life
- Reduced stress and anxiety on staff
- Increased offender turn-over, reduced staff turn-over
Benefit to the State of Oklahoma

- Individuals who promote the need for Self Awareness through Self Efficacy and Self Advocacy
- A possible reduction in the cost of ODOC Medical care by as much as 22% for long term offenders
- An ex-offender with a positive plan for his/her life
- Break in the curse of multi-generational incarceration
- Offenders who have been certified and conducted workshops will be available to serve their communities after release
Future Partnerships

- Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS)
- Implementation of Tomando Control de Su Salud
- Ponca City Masterpiece Living Program
- South Oklahoma City Hispanic Program HEED
- Harold Hamm Diabetes Center
- Wellness NOW
- Southern Oklahoma Nutrition Project
- OKHealth (statewide public employee wellness initiative)
- Southwest Jurisdiction of Churches of God in Christ
Recruiting new partners
- Networking: Finding good fits
- Brown-bag business luncheons: Enticing businesses with programs that are good for their pockets books and for their employees
- Understanding the needs of communities: What these programs will mean to participants
- “Bundling”
  - Development of an umbrella of EB programs
  - Integrating with other programs and grants (MIPPA/LIS, ADRC, Arthritis Programs, etc)
- Use of Title-III D funds for health promotion activities
- OHCA referral letters
- Recruitment (participants, leaders, sites):
  - Health fairs, speaking engagements, kick off events
  - Lay leader trainings
  - Identifying future Master Trainers
  - Encouraging license acquisitions
Any Questions or Comments?

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Appendix 5

Chronic Disease Self-Management Program (CDSMP) at Riverside PACE:
2013 Health Outcomes and Service Utilization Characteristics
Interim Report

Christine J. Jensen, Kim N. Weitzenhofer, Alyssa Spoor
Chronic Disease Self-Management Program (CDSMP) at Riverside PACE:
2013 Health Outcomes and Service Utilization Characteristics

Interim Report

March 2014
Williamsburg, Virginia

As prepared by:
Riverside Center for Excellence in Aging and Lifelong Health
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Conclusion and Recommendations.................................................................................15
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participants, CDSMP Leaders and PACE team for their engagement, and to Richmond
Senior Connections and Peninsula Agency on Aging for coordination through their
Stanford license, fidelity and Master Trainers.
Executive Summary
This report fulfills the agreement, and serves as a continuation of, the Chronic Disease Self-Management Program (CDSMP) report completed on March 28th, 2013 between Riverside Center for Excellence in Aging and Lifelong Health (CEALH) and the Virginia Department of Health (VDH). This is a technical report detailing health outcomes and service utilization characteristics of the CDSMP PACE participants who attended the February-June 2013 CDSMP program. The analyses were conducted based on data gathered from Riverside Health System’s electronic medical records (EMR). Data analyses have been conducted and reviewed to further analyze the Chronic Disease Self-Management Program’s (CDSMP) effectiveness in improving health in the PACE setting.

The study participants came into the course with fairly high acuity and multiple health issues, including high blood pressure, high HCC scores, and large number of medications. The benefits of the CDSMP in PACE are limited and this is likely due to a small sample size and other challenges with recruiting PACE participants to engage in the program over the 6-week period. While improvements were limited over the interim study period, depression scores did decline significantly in 2013.
Introduction
This report fulfills the agreement, and serves as a continuation of, the Chronic Disease Self-Management Program (CDSMP) report completed on March 28th, 2013 between Riverside Center for Excellence in Aging and Lifelong Health (CEALH) and the Virginia Department of Health (VDH). This is a technical report detailing behavioral health outcomes and service utilization characteristics of the CDSMP PACE participants who attended the February-June 2013 CDSMP program. The analyses were conducted based on data gathered from Riverside Health System’s electronic medical records (EMR). Data analyses have been conducted and reviewed to further analyze the Chronic Disease Self-Management Program’s (CDSMP) effectiveness in improving health.

The Chronic Disease Self-Management Program (CDSMP) was developed by Stanford University in 1996. CDSMP emphasizes building social supports, sharing experience and skills to increase participant’s health status, utilization of health care, positive self-management behaviors and self-efficacy. Through a weekly two and a half hour workshop conducted for six weeks CDSMP participants have shown, in multiple studies, statistically significant improvements in areas of cognitive symptom management, exercise, communication with physicians, self-reported general health, reductions in health distress, fatigue, disability and a decrease in the length of hospital stays. The following study represents a sample of nursing-home eligible participants in Programs of All-inclusive Care for The Elderly to educate the participants on effective strategies to control disease symptoms through CDSMP.

Between February-June 2013, Riverside CEALH completed the CDSMP with participants from Riverside PACE. Riverside PACE serves seniors who live in Metro Richmond and on the Virginia peninsula. PACE is a community-based alternative to institutional long-term care. The CDSMP participants are nursing-home eligible based on state criteria, needing assistance in at least three activities of daily living such as bathing, dressing, eating.
Methods
Participants
Included in the CDSMP program at Riverside PACE were 29 nursing-home eligible participants. 86.2% of the participants were female. 75.9% of participants were African American, 20.7% were White or Caucasian, and 3.4% were self-identified as “other”. The majority of participants ranged between 71-75 years of age. Participants self-identified with any of the following chronic diseases: arthritis; breathing/lung disease; cancer; depression or anxiety disorders; diabetes; heart disease; hypertension; stroke; osteoporosis; fibromyalgia; migraine; no chronic condition; and “other”. The most commonly reported chronic disease was hypertension at 72.4%, followed by arthritis at 69% and lastly, diabetes at 41.4%. (See Table 1.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample Size (N=29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>86.2% Female</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>75.9%</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>20.7%</td>
</tr>
<tr>
<td>Other</td>
<td>3.4%</td>
</tr>
<tr>
<td>Self-Reported Chronic Disease</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>72.4%</td>
</tr>
<tr>
<td>Arthritis</td>
<td>69%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>41.4%</td>
</tr>
</tbody>
</table>

Procedure
The CDSMP program was offered several times at Riverside PACE sites, exclusively for PACE participants (n=29), during the February through June 2013 timeframe. Once individuals expressed interest in participating, they were invited to be part of this particular study. Consent forms were completed by all 29 participants and they were made aware that they would be completing the standard pre-test and program evaluation as well as have particular health and financial outcomes monitored during the 2013 and 2014 calendar years. In addition, where available, baseline data, covering the second half of 2012, prior to their enrollment in CDSMP, were analyzed. This report summarizes findings from baseline and 2013 data (analyzed based on two time periods, January-June and July-December). The following health items are being analyzed:

- Blood pressure
- Weight
- BMI
- HCC score
- DNR status
- Advance Directive discussion
- Number of ED visits
• Number of hospitalizations
• Number of medications
• Number of falls
• Fall Risk Score (Berg Balance Scale)
• Depression Score (Geriatric Depression Scale)

In addition, the following cost data items are being analyzed:
• Cost of medications
• Overall cost

Results
Health Data
Table 2 below highlights the health data compared during the first and second half of 2013. Following the table are some additional details about several of the key variables including blood pressure, falls, and depression.

<table>
<thead>
<tr>
<th>Table 2. 2013 Behavioral Health Data.</th>
<th>Jan 1- June 30 2013</th>
<th>Jul 1 – Dec 31 2013</th>
</tr>
</thead>
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<tr>
<td><strong>Sample Size (N=29)</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Variable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight in Pounds (Median)</td>
<td>184</td>
<td>192</td>
</tr>
<tr>
<td>BMI (Median)</td>
<td>31.7</td>
<td>31.13</td>
</tr>
<tr>
<td>HCC Score (Median)</td>
<td>1.77</td>
<td>2.01</td>
</tr>
<tr>
<td>DNR Code (% with DNR)</td>
<td>24.1%</td>
<td>31%</td>
</tr>
<tr>
<td>Advance Directive (% Discussed)</td>
<td>96.6%</td>
<td>93.1%</td>
</tr>
<tr>
<td>( % Completed)</td>
<td>55.6%</td>
<td>56.5%</td>
</tr>
<tr>
<td><strong>Blood Pressure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Systolic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 120 (normal)</td>
<td>20.7%</td>
<td>11.1%</td>
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<tr>
<td>120-139 (prehypertension)</td>
<td>44.8%</td>
<td>51.9%</td>
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<tr>
<td>140-159 (high bp stage 1)</td>
<td>20.7%</td>
<td>25.9%</td>
</tr>
<tr>
<td>160+ (high bp stage 2)</td>
<td>10.3%</td>
<td>11.1%</td>
</tr>
<tr>
<td>180+ (hypertensive crisis - emergency care needed)</td>
<td>3.4%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Diastolic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than 80 (normal)</td>
<td>82.8%</td>
<td>74%</td>
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<tr>
<td>80-89 (prehypertension)</td>
<td>10.3%</td>
<td>22.2%</td>
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<td>90-99 (high bp stage 1)</td>
<td>6.9%</td>
<td>3.7%</td>
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<tr>
<td><strong>Fall Risk Score</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% High Risk</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong># of Falls (Mean)</strong></td>
<td>.19</td>
<td>2.75</td>
</tr>
<tr>
<td><strong># ER visits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% 1</td>
<td>26.9%</td>
<td>17.2%</td>
</tr>
<tr>
<td>% 2 or more</td>
<td>0%</td>
<td>10.3%</td>
</tr>
<tr>
<td><strong># of Hospitalizations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>13.8%</td>
<td>20.7%</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>% 2 or more</td>
<td>0%</td>
<td>7.2%</td>
</tr>
</tbody>
</table>

**Geriatric Depression Score**

<table>
<thead>
<tr>
<th>%</th>
<th>71.4%</th>
<th>77.8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>% No Depression</td>
<td>71.4%</td>
<td>77.8%</td>
</tr>
<tr>
<td>% Mild Depression</td>
<td>17.9%</td>
<td>18.5%</td>
</tr>
<tr>
<td>% Severe Depression</td>
<td>10.7%</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

**# of Medications**

<table>
<thead>
<tr>
<th>%</th>
<th>6.9%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 1-5</td>
<td>6.9%</td>
<td>0%</td>
</tr>
<tr>
<td>% 6-11</td>
<td>31%</td>
<td>35.7%</td>
</tr>
<tr>
<td>% 12-16</td>
<td>24.1%</td>
<td>32.1%</td>
</tr>
<tr>
<td>% 17-22</td>
<td>34.5%</td>
<td>25%</td>
</tr>
<tr>
<td>% 23-28</td>
<td>0%</td>
<td>3.6%</td>
</tr>
<tr>
<td>% 29-34</td>
<td>3.4%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Note: PACE Participants completed CDSMP Feb-June 2013.**

**Blood Pressure.** Based on a scale from the American Heart Association\(^1\), the following ranges for Systolic and Diastolic ratios have been analyzed. Systolic is the top number of the blood pressure reading measuring “pressure in the arteries when the heart beats.” Diastolic is the number on the bottom of the blood pressure reading, measuring the “pressure in the arteries between heartbeats.”

Between January-June 2013, 45% of the 29 participants ranged between 120-139 (prehypertension range) for the systolic recording. 82% of participants had an 80 or lower (normal range) for their diastolic recording. Between July 2013- December 2013, 48% of the participants ranged between 120-139 (prehypertension range) for the systolic recording and 69% of the participants had an 80 or lower (normal range) for their diastolic recording. (See Table 2.)

**Weight.** For the January-June 2013 data, the most common weight range for participants was between 131-160 pounds (21%). For the July-December 2013 data, the most common weight range for participants remained the same and increased to 27.6% of the sample.

---

\(^1\) American Heart Associations, www.heart.org/HEARTORG
Table 3. Weight of PACE Participants during 2013.

<table>
<thead>
<tr>
<th>Weight in lbs</th>
<th>01/13-06/13 # of participants</th>
<th>01/13-06/13 Percent (%)</th>
<th>07/13-12/13 # of participants</th>
<th>07/13-12/13 Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-130</td>
<td>4</td>
<td>13.8</td>
<td>3</td>
<td>10.3</td>
</tr>
<tr>
<td>131-160</td>
<td>6</td>
<td>20.7</td>
<td>8</td>
<td>27.6</td>
</tr>
<tr>
<td>161-190</td>
<td>5</td>
<td>17.2</td>
<td>2</td>
<td>6.9</td>
</tr>
<tr>
<td>191-220</td>
<td>5</td>
<td>17.2</td>
<td>5</td>
<td>17.2</td>
</tr>
<tr>
<td>221-250</td>
<td>2</td>
<td>6.9</td>
<td>5</td>
<td>17.2</td>
</tr>
<tr>
<td>251-280</td>
<td>4</td>
<td>13.8</td>
<td>2</td>
<td>6.9</td>
</tr>
<tr>
<td>281-310</td>
<td>2</td>
<td>6.9</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>311-340</td>
<td>1</td>
<td>3.4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29</strong></td>
<td><strong>100.0</strong></td>
<td><strong>29</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**Advance Directives.** PACE participants are a targeted group within Riverside Health System with respect to making them aware of advance directives and having discussions around their wishes. During 2013, nearly 95% of CDSMP participants had participated in a discussion about advance directives and more than half had completed these documents. This demonstrates the value the PACE model places on these discussions and encouraging PACE participants to be actively engaged in their own decisions.

**Fall Risk Score.** As measured by the Berg Balance Scale (BBS)\(^2\), fall risk scores have been identified for each participant. According to the BBS scale, a score of 0-20 = high fall risk, 21-40 = medium fall risk, 41-56 = low fall risk. Between January-June 2013, all participants were in the high risk category with the most common fall risk score being 14. Between July-December 2013, all participants remained in the high risk category with the most common fall risk score being 13.

Within the January-June 2013 data, falls were recorded for 21 of the 29 participants. The average fall rate was less than 1.0 (19). In the July-December 2013 data, falls were recorded for 12 of the 29 participants. The average fall rate was 2.75. It is unclear what led to the increase in falls over the second half of the year.

**Geriatric Depression Score.** The geriatric depression score for participants was based on the Geriatrics Depression Scale Short Form(GDS-S)\(^3\). On this scale, a score of 0-4 indicates “no depression”, a score of 5-10 is “suggestive of a mild depression”, and a score of 11+ is “suggestive of severe depression”. Between January-June 2013, 71.4%

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\(^3\) Geriatrics Depression Scale – Short Form, http://geriatrics.uthscsa.edu/tools/GDS%20short%20form.pdf
of participants were scored as having “no depression”. Showing a slight increase in the percentage of participants who scored as having “no depression”, this accounted for 77.8% of participants between July-December 2013. (See Table 2.) These findings are displayed below in Figures 1 and 2. It is interesting to note that depression scores dropped significantly \( t(26) = 2.12 \) (\( p < .05 \)) during the second half of the year. It is unclear if this is directly connected to the completion of the CDSMP course or other participant experiences.

![Geriatric depression score January 1 - June 30, 2013](image1)

*Figure 1. Geriatric Depression Score for participants (Jan-June 2013).*

![Geriatric depression score July 1 - December 31, 2013](image2)

*Figure 2. Geriatric Depression Score for participants (July-Dec 2013).*
**Number of Medications per Participant.** Between January-June 2013, the number of medications for participants ranged from 17-22 (34.5%). Between July-December 2013, the number of medications for participants decreased and ranged from 6-11 (35.7%). This demonstrates an overall decrease in number of medications for the largest percentage of participants.

*Figure 3.* Number of Medications for participants (Jan-June 2013).

*Figure 4.* Number of Medications for participants (July-Dec 2013).
Cost Data
This section includes information on the cost of medications and the overall costs, including claims data.

Cost of Medications. For baseline data (between July-December 2012), 20.7% of participants had very little medication costs, ranged from $0.00-$500.00. The next largest percentage of participants (17.2%) ranged from $1,001.00-$1,500.00. For the January-June 2013 data, the 29 participants’ cost of medication ranged from just below $500.00 up to $10,500. The two most frequently reported ranges for medication costs were from $501.00 - $1,000.00 and $3,001.00 - $3,500 as displayed in Figure 6. For the July-December 2013 data, the two most frequently reported ranges for medication costs were from $501.00 – 1,000.00 and $4,001.00 - $4,500. (See Figures 5, 6, and 7 below).

Figure 5. Cost of Medications for participants (2012).
Figure 6. Cost of Medications for participants (Jan-June 2013).

Figure 7. Cost of Medications for participants (July-Dec 2013).
Table 4. Median Cost of Medications for Participants (2012-2013)

<table>
<thead>
<tr>
<th>Cost of Medications</th>
<th>July-December 2012</th>
<th>Cost of medications Jan-June 2013</th>
<th>Cost of medications July-December 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td># of participants</td>
<td>26</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Median</td>
<td>$1811.99</td>
<td>$2342.98</td>
<td>$3980.84</td>
</tr>
</tbody>
</table>

Table 5. Median Monthly Charges per Participant.

<table>
<thead>
<tr>
<th>6-month periods</th>
<th>Baseline July - December 2012</th>
<th>January - June 2013</th>
<th>July - December 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median monthly</td>
<td>$7,431</td>
<td>$4,874</td>
<td>$9,389</td>
</tr>
<tr>
<td>charge amount</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per participant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median monthly</td>
<td>$3,565</td>
<td>$3,231</td>
<td>$4,417</td>
</tr>
<tr>
<td>paid amount</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per participant</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: These figures do not include medication costs.
Claims include charges from the following services:

- home health care;
- personal care;
- skilled nursing;
- assisted living;
- hospital;
- lab;
- emergency room;
- physicians;
- outpatient specialists;
- ambulance;
- durable medical equipment;
- and ancillary costs.

PACE contracts with local health partners, so the paid amount is what the average participant in the 1-month period costs PACE. 55% of the participants are in urban areas near Richmond, where Riverside PACE is unable to access Riverside Hospital and services (which generally show internal cost containment). Interestingly, the charges dropped from baseline to first half of 2013 but then rose again fairly substantially toward the end of 2013. Since there are frail patients, it is unclear if the costs are increasing with increasing age and frailty or changes in symptom management around the time of CDSMP program which was not able to be maintained.

**Conclusion and Recommendations**

It has been clearly documented that the CDSMP is effective in helping individuals manage their chronic conditions. This project set out to determine if that impact is measurable and sustainable in PACE participants. PACE participants are nursing home eligible and thus are typically more frail than older participants who engage in the CDSMP course. Some of the challenges in determining the program’s impact in this setting include the small sample size and lack of a control group. It is recommended that a larger number of PACE participants (approximately 100) complete the program and be studied in order to determine program impact. A number of PACE participants were not eligible to complete the program in early 2013 because they were not able to engage cognitively. It is challenging to help PACE participants understand and appreciate the value of the program as well as the value of scientific research. There are also operational lessons learned in terms of how the PACE staff are incorporated into the study and into the course offerings. While improvements were limited over the interim study period, depression scores did decline significantly in 2013. Management of depression and dealing with difficult emotions are key topics covered in CDSMP. PACE participants were encouraged to engage in supportive discussions with each other regarding their action plans and goals and perhaps this interaction contributed to the lower depression scores.
Appendix 6

Virginia Chronic Disease Self-Management Program (CDSMP) Evaluation Report
September 2012

Virginia Department of Health
Introduction

The Chronic Disease Self-Management Program (CDSMP) is an evidence-based self-management and health promotion program, developed by the Stanford Patient Education Research Center of the Stanford University School of Medicine (http://patienteducation.stanford.edu/programs/cdsm.html). The overarching goal of the program is to improve the physical and emotional health and well-being of participants while reducing health care costs. The program is designed to “help people gain self-confidence in their ability to control their symptoms and how their health problems affect their lives.” Led by two trained leaders, the CDSMP is a two and a half hour workshop conducted once per week for six weeks in community settings such as senior centers, clinics, and hospitals. The workshops are interactive and focus on skill-building, sharing experiences, and building social support.

There is strong evidence across many studies that CDSMP participants experience the following beneficial health outcomes:

- Greater energy/reduced fatigue
- Greater participation in physical activity
- Fewer social role activity limitations
- Better psychological well-being
- Enhanced communication and partnerships with physicians
- Improved health status
- Greater self-efficacy, and
- Reduction in pain symptoms

Long-term, CDSMP has been shown to reduce healthcare costs by decreasing the number of emergency room visits, the number of hospital admissions, and hospital length of stay. Healthcare needs are increasingly met through outpatient settings (e.g., physician offices). Health care cost savings from implementation of the program are achieved within the first year. Other studies show additional benefits of the CDSMP program: 1) effectiveness across various chronic diseases, 2) effectiveness across participant socioeconomic and educational levels, 3) enabling participants to manage progressive, debilitating illness, 4) maintenance of health benefits over time, and 5) support by decades of federal research from National Institute of Health (NIH), Centers for Disease Control and Prevention (CDC), and the U.S. Agency for Healthcare Research and Quality (AHRQ).

The Virginia Department of Health’s (VDH) CDSMP (You Can! Live Well, Virginia) started in 2005 under the management of the Virginia Arthritis Control Project. In 2010, VDH
partnered with the Virginia Department for the Aging (now the Department for Aging and Rehabilitative Services) to expand across the Commonwealth particularly to adults 60 years of age and older. The following results pertain to participant outcomes for workshops held from September 2010 through April 2012.

**Evaluation Questions:**

The evaluation study is designed to answer the following questions: Do participants experience…

1. …better health status?
2. …less severe or less frequent health-related distress?
3. …less fatigue, shortness of breath, and pain?
4. …more total time spent participating in aerobic and non-aerobic (strengthening/stretching) physical activity?
5. …more frequent communications with treating physicians?
6. …fewer hospitalizations and urgent care (ER) visits related to their chronic condition?

**Method**

**Participant Recruitment**

During the time period of September 2010 through April 2012, 1,957 adults attended CDSMP workshops across the state. Of those individuals, 1,068 (55%) adults living in seventeen local health district communities completed pre and post assessments. Participants were recruited by various organizations (i.e. Area Agencies on Aging, local health departments, health systems, etc.) to enhance self-confidence in controlling disease symptoms.

**Evaluation Design and Instruments**

The instruments (paper-and-pencil questionnaires) used in this evaluation have been developed and validated by the Stanford Patient Education Research Center and used for over 20 years. Participants completed a 27-item written questionnaire before and after participating in the CDSMP workshop. The questionnaire was comprised of demographic questions (four items) and self-administered rating scales measuring:

- Perceived general health status
- Health distress and illness intrusiveness
- Symptom severity (pain, fatigue, shortness of breath)
- Self-management behaviors, including: cognitive symptom management and communication with physicians

A copy of the questionnaire is in Appendix B. A more detailed description of the item scales, item coding and creation of index scores is presented in the Results section.

**Statistical Analyses**

Pre and post test data were entered into a Microsoft Access database, which was imported into a SPSS data file for later analysis. Descriptive analyses included mean index scores and
categorical response percentages. To test for differences between pre and post test mean index scores, repeated-measure t-tests were performed.

Results

Participants

From September 2012 through April 2012, 1,068 adults participated in the multiple-session chronic disease self-management program and completed the pre and post test. Participants were distributed across the state in seventeen local health district sites (Table 1).

Table 1 -- Distribution of Participants by Health District

<table>
<thead>
<tr>
<th>Health District</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Shenandoah</td>
<td>179</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>41</td>
</tr>
<tr>
<td>Chesterfield</td>
<td>12</td>
</tr>
<tr>
<td>Chickahominy</td>
<td>7</td>
</tr>
<tr>
<td>Cumberland Plateau</td>
<td>57</td>
</tr>
<tr>
<td>Fairfax</td>
<td>73</td>
</tr>
<tr>
<td>Lenowisco</td>
<td>60</td>
</tr>
<tr>
<td>Lord Fairfax</td>
<td>51</td>
</tr>
<tr>
<td>Mount Rogers</td>
<td>94</td>
</tr>
<tr>
<td>Mount Rogers</td>
<td>94</td>
</tr>
<tr>
<td>Norfolk</td>
<td>28</td>
</tr>
<tr>
<td>Peninsula</td>
<td>52</td>
</tr>
<tr>
<td>Richmond</td>
<td>200</td>
</tr>
<tr>
<td>Thomas Jefferson</td>
<td>28</td>
</tr>
<tr>
<td>Three Rivers</td>
<td>8</td>
</tr>
<tr>
<td>Virginia Beach</td>
<td>66</td>
</tr>
<tr>
<td>West Piedmont</td>
<td>5</td>
</tr>
<tr>
<td>Western Tidewater</td>
<td>77</td>
</tr>
</tbody>
</table>

Demographics:

- More than half (62%) participants were white, non-Hispanic (Figure 1)
- 50% had 12 years of education or less (i.e., high school education or less) (Figure 2)
- 30% were married (Figure 3)
- Three out of four (78%) were female (Figure 4)
**Chronic Health Condition**: More than one third (33%) have one chronic condition, 55% have more than one condition, and 11% report having no chronic condition. A large number of participants report having arthritis (58%), heart disease (37%), diabetes (33%), or some other chronic health condition that was not listed (39%). See table 2 for the number of participants reporting each type of chronic condition.

**Table 2 – Percentage of Adults Reporting Having a Chronic Health Condition**

<table>
<thead>
<tr>
<th>Chronic Condition</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis</td>
<td>544</td>
<td>57.5</td>
</tr>
<tr>
<td>Asthma</td>
<td>105</td>
<td>11.1</td>
</tr>
<tr>
<td>Cancer</td>
<td>116</td>
<td>12.3</td>
</tr>
<tr>
<td>Diabetes</td>
<td>309</td>
<td>32.7</td>
</tr>
<tr>
<td>Emphysema or Chronic Obstructive Pulmonary Disease (COPD)</td>
<td>59</td>
<td>6.2</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>354</td>
<td>37.4</td>
</tr>
<tr>
<td>Other lung disease</td>
<td>39</td>
<td>4.1</td>
</tr>
<tr>
<td>Other chronic condition</td>
<td>369</td>
<td>39.0</td>
</tr>
</tbody>
</table>

**General Health Status & Knowledge of Chronic Disease Management**

Participants were asked to rate their general health status (“In general, would you say your health is…excellent/very good/good/fair/poor?”) and their knowledge about managing their chronic condition (“In general, would you say your knowledge about managing your chronic condition is…excellent/very good/good/fair/poor?”) on a five-point scale (e.g., 1=Excellent; 5=Poor). Ratings were reverse-scored -- for example, ratings of “excellent” (=1) were changed to have a value of 5.

At the start of the program, participants rated, on average, their general health as “good” (M=2.77) and their knowledge about managing their chronic condition as “good” (M=3.02). On both indicators there were statistically significant improvements (Significant at p<.05) found after the completion of the course (Figure 5). Ratings on general health status improved by 7% and ratings on self-management knowledge improved by 17% over baseline.

**Figure 5 – General Health and Knowledge About Management of Chronic Condition***

* Based on rating scale of 1 (“poor”) to 5 (“excellent”). Significant at p<.05.
**Health Distress**

Using a six-point rating scale, participants were asked to report “how much time during the past month” they were discouraged by their health problems, fearful about their future health, frustrated by their health problem, or considering their health a worry in their life. Reports ranged from “none of the time” (=0) to “all of the time” (=5). A mean total score was computed across the four items, with a possible range of zero to five. Higher scores indicated greater distress.

Before the program, participants typically reported feeling distressed from “a little of the time” to “some of the time” (M=1.64). By the end of the program, their level of distress about their health was significantly lower, decreasing by about 7% (Figure 6).

**Figure 6 – Perceived Distress Related to Health Problems***

* Based on frequency scale of 0 (“none of the time”) to 5 (“all of the time”). Significant at p<.05.

**Fatigue, Pain and Shortness of Breath Severity**

Using a 10-point visual numeric rating scale, participants were asked to rate the severity of how much fatigue, shortness of breath, and pain affected them in the past two weeks. Higher scores denoted greater severity of physical symptoms, with ten (=10) being the highest rating. Participants indicated absence of symptoms as zero (=0).

Participants’ levels of fatigue, shortness of breath, and pain were significantly less severe by the end of the program (Figure 7). Mean level of fatigue decreased by 5%, level of pain decreased by 6%, and level of shortness of breath decreased by 4%.
* Based on visual numeric severity rating scale of 0 (absence of symptom) to 10 (“severe”). Significant at p<.05.

**Exercise/Physical Activity**

Participants were asked to report how much total time (from no time to more than 3 hours per week) they spent in aerobic activity during the **past week**. Five questions regarding various aerobic-type activities—walking, swimming (including aquatic exercise), bicycling (including use of stationary bikes), use of aerobic exercise equipment (e.g., stairmaster, rowing, skiing machine) and other aerobic activities (e.g., dancing)—were asked. Participants were also asked one question about total time spent doing stretching or strengthening exercises (e.g., weight training, yoga, tai-chi), which is a non-aerobic activity. Responses were converted into minutes per week: “none” = 0 minutes; “less than 30 min/week” = 15 minutes; “30-60 minutes” = 45 minutes; “1-3 hours per week” = 120 minutes; and “more than 3 hours per week” = 180 minutes. Responses to the five aerobic activity questions were summed into a total score representing total time spent in aerobic activity per week. Higher scores indicated more minutes spent on physical activity.

Prior to the program, participants spent an average of 70 minutes in aerobic activity and an additional 35 minutes in stretching/strengthening exercises per week. Participants experienced significant increases (34% and 25%, respectively) in the amount of time spent in aerobic and non-aerobic activity by the end of the program (Figure 8).
**Cognitive Symptom Management**

Using a 6-point behavior change scale – ranging from “never” (=0) to “always” (=5) -- participants were asked to report how often they practiced various cognitive stress reduction (or pain reduction) techniques (e.g., cognitive distancing, mind games, progressive muscle relaxation, visualization or guided imagery, positive thinking). Mean scores were computed using six items, with a possible range from zero to five. Higher scores indicated greater use of positive cognitive techniques for coping.

Prior to the program, participants typically reported that they “almost never” used cognitive techniques (M=1.21). By the end of the program, they reported significantly more frequent use of cognitive techniques, an increase of about 30% (Figure 9).

**Mental Stress Management/Relaxation**

Participants were asked “how many times do you do mental stress management or relaxation techniques” in the past week. To score the item, number of times was recoded into an ordinal scale representing number of days per week: “no days” (=0 times), “one to seven days” or averaging weekly (≥ 1 and < 8 times), and “8 or more days” per week or averaging more than
daily (≥ 8 times). Participants were more likely to perform these techniques on a weekly basis (from one to seven times). There was a 12% reduction in the frequency of use of stress management techniques by the end of the program (Figure 10).

**Figure 10 – Frequency of Using Mental Stress Management/Relaxation Techniques in Past Week**

![Graph showing frequency of using mental stress management techniques](image)

* Based on rating scale of 1 (“not at all confident”) to 5 (“total confident”). Significant at p<.05.

**Communication with Physicians**

Using a six-point scale (0=“never” to 5=“always”), participants were asked to indicate how often they communicated with their physician, specifically, preparing a list of questions for the doctor, asking the doctor for more information or clarification about their treatment, and discussing personal problems possibly related to their illness with their physician. A mean score was computed from responses to three items, with a possible range of zero to five. Higher scores indicated better communication with physicians.

There was no significant improvement in the participants’ levels of communication with their physicians (Figure 11). Levels of communication decreased from 2.70 to 2.54 which was not statistically significant.

**Figure 11 – Participant Reported Level of Communication with Physicians**

![Graph showing level of communication](image)

* Based on rating scale of 0 (“never”) to 5 (“always”).
Summary

Among the 1,068 persons with chronic disease who participated in a chronic disease self-management program throughout Virginia, there is evidence to indicate that there were improvements in health status and knowledge of managing their chronic condition. While there was no significant improvement in the level of communication with physicians, by the end of the program, participants showed:

- Decreased health-related mental stress (distress)
- Reduced levels of pain, fatigue, and shortness of breath
- More frequent use of cognitive techniques for coping with emotional and physical symptoms
- More frequent use of mental relaxation techniques to manage their stress
- Increased amount of aerobic and non-aerobic physical activity

Mean rating scores on each health outcome indicator are summarized in Appendix A. Some of the limitations of this study include the small sample size and the duration of the study. For instance, the pre and post assessment within the 6 week interval does not allow tracking of long-term effects. With a longer follow-up interval (e.g., three, six, or twelve months) between pre- and post-test, greater significance may have been observed in some of the indicators.

In addition, the assessment tool was evaluated in the year 2011 and as a result the following sections were removed from the assessment: self-efficacy, physical ability to complete activities of daily living, and healthcare utilization. This change reduced the sample size, limiting the ability to demonstrate significant statistical changes. Therefore, the aforementioned sections were removed from this evaluation.
**Appendix A**: Virginia Chronic Disease Self-Management Program (CDSMP): Mean Health Outcome Ratings (Pre- and Post-Test Comparison)

<table>
<thead>
<tr>
<th></th>
<th>September 2012 - April 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
</tr>
<tr>
<td>Total number of participants</td>
<td>1068</td>
</tr>
<tr>
<td>Number of health district sites</td>
<td>17</td>
</tr>
<tr>
<td>Participants who are white (%)</td>
<td>62%</td>
</tr>
<tr>
<td>Participants who have 12 years of education or less (%)</td>
<td>50%</td>
</tr>
<tr>
<td>Participants who are married (%)</td>
<td>30%</td>
</tr>
<tr>
<td>One chronic condition</td>
<td>33%</td>
</tr>
<tr>
<td>More than one chronic condition</td>
<td>55%</td>
</tr>
<tr>
<td>Participants who have heart disease (%)</td>
<td>37%</td>
</tr>
<tr>
<td>Participants who have arthritis (%)</td>
<td>58%</td>
</tr>
<tr>
<td>Participants who have diabetes (%)</td>
<td>33%</td>
</tr>
<tr>
<td>Participants who have lung condition (%)</td>
<td>11%</td>
</tr>
<tr>
<td>Good general health status (mean)$^1$</td>
<td>2.77</td>
</tr>
<tr>
<td>Good knowledge re: managing chronic disease (mean)$^1$</td>
<td>3.02</td>
</tr>
<tr>
<td>Health distress (mean)$^2$</td>
<td>1.64</td>
</tr>
<tr>
<td>Fatigue (mean)$^3$</td>
<td>5.16</td>
</tr>
<tr>
<td>Shortness of breath (mean)$^3$</td>
<td>2.41</td>
</tr>
<tr>
<td>Pain (mean)$^3$</td>
<td>5.31</td>
</tr>
<tr>
<td>Total time (minutes) for aerobic activity (mean)</td>
<td>70.1</td>
</tr>
<tr>
<td>Total time (minutes) for non-aerobic activity (mean)</td>
<td>34.8</td>
</tr>
<tr>
<td>Frequency of using cognitive symptom management techniques (mean)$^4$</td>
<td>1.21</td>
</tr>
<tr>
<td>Number of times used mental relaxation techniques in past week (mean)</td>
<td>1.34</td>
</tr>
<tr>
<td>Level of communication with physicians (mean)$^5$</td>
<td>2.70</td>
</tr>
</tbody>
</table>

* Significant at $p<.05$.

$^1$ Based on rating scale of 1 (poor) to 5 (excellent).

$^2$ Based on frequency rating scale of 0 (none of the time) to 5 (all of the time).

$^3$ Based on severity rating scale of 0 (absent) to 10.

$^4$ Based on frequency rating scale of 0 (never) to 5 (always).

$^5$ Based on rating scale of 0 (never) to 5 (always).
1. Ethnic origin (check only one):  
- White not Hispanic  
- Black not Hispanic  
- Hispanic  
- Asian or Pacific Islander  
- Filipino  
- American Indian/Alaskan Native  
- Other: __________________________

2. Please circle the highest year of school completed:  

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23+ |
| (primary) | (high school) | (college/university) | (graduate school) |

3. Are you currently (check only one):  
- married  
- single  
- separated  
- divorced  
- widowed

4. Please indicate below which chronic condition(s) you have:  
- Diabetes  
- Asthma  
- Emphysema or COPD  
- Other lung disease  
  Type of lung disease: ________________________________
- Heart disease  
  Type of heart disease: ________________________________
- Arthritis or other rheumatic disease  
  Specify type: ________________________________
- Cancer  
  Type of cancer: ________________________________
- Other chronic condition  
  Specify: ________________________________
## General Health

1. In general, would you say your knowledge about managing your chronic conditions is:

   (Circle one)
   
   Excellent...................1
   Very good...................2
   Good..........................3
   Fair...........................4
   Poor.........................5

2. In general, would you say your health is:

   Excellent...................1
   Very good...................2
   Good..........................3
   Fair...........................4
   Poor.........................5

## Symptoms

How much time during the **past month**...

<table>
<thead>
<tr>
<th></th>
<th>None of the time</th>
<th>A little of the time</th>
<th>Some of the time</th>
<th>A good bit of the time</th>
<th>Most of the time</th>
<th>All of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Were you discouraged by your health problems?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Were you fearful about your future health?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Was your health a worry in your life?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Were you frustrated by your health problems?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
1. We are interested in learning whether or not you are affected by fatigue. Please circle the number below that describes your fatigue in the past 2 weeks:

![Fatigue Scale]

2. We are interested in learning whether or not you are affected by shortness of breath. Please circle the number below that describes your shortness of breath in the past 2 weeks:

![Shortness of Breath Scale]

3. We are interested in learning whether or not you are affected by pain. Please circle the number below that describes your pain in the past 2 weeks:

![Pain Scale]
Physical Activities

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? (Please circle one number for each question.)

<table>
<thead>
<tr>
<th>Activity</th>
<th>None</th>
<th>Less than 30 min/wk</th>
<th>30-60 min/wk</th>
<th>1-3 hrs per week</th>
<th>More than 3 hrs/wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stretching or strengthening exercises (range of motion, using weights, etc.)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Walk for exercise</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Swimming or aquatic exercise</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Bicycling (including stationary exercise bikes)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Other aerobic exercise equipment (Stairmaster, rowing, skiing machine, etc.)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Other aerobic exercise</td>
<td>Specify</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Coping With Symptoms

When you are feeling down in the dumps, feeling pain or having other unpleasant symptoms, how often do you (Please circle one number for each question):

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Almost never</th>
<th>Sometimes</th>
<th>Fairly often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Try to feel distant from the discomfort and pretend that it is not part of your body</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Don't think of it as discomfort but as some other sensation, like a warm, numb feeling</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Play mental games or sing songs to keep your mind off the discomfort</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Practice progressive muscle relaxation</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Practice visualization or guided imagery, such as picturing yourself somewhere else</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Talk to yourself in positive ways</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. In the past week, how many times did you do mental stress management or relaxation techniques?</td>
<td>_____</td>
<td>times</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. When you **visit your doctor**, how often do you do the following *(please circle one number for each question)*:

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Fairly Often</th>
<th>Very Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Prepare a list of questions for your doctor</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b. Ask questions about the things you want to know and things you don’t understand about your treatment</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c. Discuss any personal problems that may be related to your illness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

2. **In the past 6 months**, how many times did you visit a physician?  
*Do not include visits while in the hospital or the hospital emergency department*...

3. **In the past 6 months**, how many times did you go to a hospital emergency department?

4. **In the past 6 months**, how many TIMES were you hospitalized for one night or longer?

   a. How many total NIGHTS did you spend in the hospital **in the past 6 months**?

   b. Were any of these hospitalizations at a skilled nursing facility, convalescent hospital, or other minimum care facility?

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**Thank you for your help!**