

Oregon State **OSU** College of Health and Health Sciences

Using Impact Estimates to Support Sustainability: Oregon's Living Well with Chronic Conditions Program

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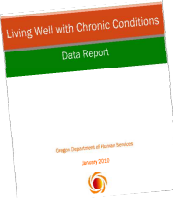
The Living Well impact analysis

- Living Well with Chronic Conditions
 - Living Well: English version of Stanford-based CDSMP
 - Tomando Control de su Salud: Spanish version of CDSMP
 - Positive Self-Management Program: HIV/AIDS adaptation
- No comprehensive evaluation of Living Well has been conducted to date
 - Funds are exclusively for program implementation
- Goals of the impact report
 - Summarize implementation, participants and programs
 - Estimate likely impact of Living Well on
 - health status and quality of life
 - healthcare utilization and costs
 - Discuss potential models for sustainability

Common situation

Data available

- Initial Living Well report
- Program data files on
 - Living Well participants 2005-09: demographic, clinical, and participation variables (n=3,916)
 - Living Well programs conducted 2005-09: location, cost, and attendance variables
- Participant surveys (n=49)
- External estimates of effect
 - Quality of life
 - Utilization and cost



Methods

- Descriptive
 - Participants: demographics, chronic conditions, program benefits (small sample)
 - Programs: program type, location, cost
- Impact: effect estimates from other sources
 - 1 quality adjusted life week per year per participant
 - utilization

	Baseline (6 months)	Annualized	12 month reduction	Annual post-CDSMP
ED visits	0.4	0.8	0.1	0.7
Hospitalizations	0.2	0.4	0.1	0.3
Hospital days	1.2	2.4	0.5	1.9

Lorig KR et al. *Eff Clin Pract* 2001; 4: 256-62.
 Richardson G et al. *J Epidemiol Community Health* 2008; 62: 361-7.

TABLE 3
Changes at 1 Year in Health Status, Health Behaviors, Self-Efficacy, and Health Care Utilization

VARIABLE	BASELINE MEAN ± SD (N = 489)	12-MONTH CHANGE MEAN ± SD (N = 489)	P VALUE
Health status*			
Disability (0-3)	0.4 ± 0.4	0.0 ± 0.3	0.77
Health distress (0-6)	2.3 ± 1.3	-0.3 ± 1.2	≤ 0.001
Social/role activity limitation (0-4)	2.0 ± 1.1	-0.2 ± 1.0	≤ 0.001
Illness intrusiveness (1-7)	3.3 ± 1.4	-0.2 ± 1.2	≤ 0.001
Fatigue (1-10)			0.002
Shortness of breath (1-10)			0.003
Pain (1-10)			0.03
Self-rated health (1-5)			0.20
Depression (0-3)			≤ 0.001
Health behaviors			
Aerobic exercise (min/wk)	87 ± 94.7	13 ± 97.3	0.01
Range-of-motion exercise (min/wk)	35 ± 49.2	9 ± 55.8	≤ 0.001
Cognitive symptom management (0-3) [†]	1.3 ± 0.9	0.4 ± 0.9	≤ 0.001
Communication with physician (0-6) [†]	2.9 ± 1.2	0.2 ± 1.0	≤ 0.001
Self-efficacy (1-10) [†]	5.2 ± 2.2	0.5 ± 2.4	≤ 0.001
Health care utilization[‡]			
Physician visits (n, past 6 mo)	5.5 ± 6.0	-0.4 ± 7.2	0.19
Emergency department visits (n, past 6 mo)	0.4 ± 0.6	-0.1 ± 1.0	≤ 0.05
Hospitalizations (n, past 6 mo)	0.2 ± 0.6	-0.1 ± 0.7	0.14
Days in hospital (past 6 mo)	1.2 ± 5.9	-0.5 ± 7.3	0.12

*A lower score is better.
[†]A higher score is better.
[‡]Participants were asked to report utilization in the 6 months prior.

Lorig KR et al. *Eff Clin Pract* 2001; 4: 256-62.

- Assumptions
 - no effect beyond two years
 - impact limited to completers (71%)
 - costs assigned to all participants
 - costs: \$375/participant based on statewide survey
 - inpatient: \$ 2,336/day
 - U.S. Census Bureau, State and Metropolitan Area Data Book
 - emergency department: \$1,140/visit
 - AHRQ, Medical Expenditure Panel Survey
- Calculations
 - effect estimate x person-years of exposure
 - e.g. ED visits:
 - reduction of 0.1 visit per person-year: 0.1 * 5566 person-years=556.6=557 fewer ED visits
 - cost/ED visit=\$1,140: \$1,140/visit * 557 visits=\$634,980

Assumptions were needed to fill the gap between data available and ideal data

Results: Participants

- 3,919 participants
 - mean age=62 years
 - 76% women
 - Race/ethnicity
 - Hispanic: 437 (11.2%)
 - African American: 50 (1.3%)
 - Native American: 118 (3.0%)
 - “completion” rate: 71% of participants attended 4 or more sessions

Data collected by Living Well sites were crucial

Number of chronic diseases among Living Well participants

Number of Conditions	Percentage of Participants
0*	~13%
1	~18%
2	~19%
3	~17%
4	~13%
5	~8%
6	~5%
7+	~4%

Mean=2.7 conditions
20% with 4+

* from a list of 14 conditions; not all participants reported one of the listed conditions

Results: Health, quality of life

- Almost certainly, *Living Well* improved
 - vitality and fatigue
 - role limitations
 - psychological well-being
 - physical activity
 - ability to manage chronic conditions
 - disease specific self-efficacy
 - clinician communication
- Challenge: difficult to translate findings into understandable metrics (e.g. change scores on surveys)

“[I] always wanted to do a running race and the [Living Well program] sparked my confidence. I’ve run 2 races. I will run the “Aloha 8 mile Run” even if I have to walk.”

- Living Well Participant

Review of Findings on Chronic Disease Self-Management Program (CDSMP) Outcomes: Physical, Emotional & Health-Related Quality of Life, Healthcare Utilization and Costs

Results: QALYs and utilization

Estimated Impact of Living Well in Participants to Date

Living Well impact on	Estimated impact	
Quality adjusted life years	107 years gained	
<i>Healthcare utilization</i>	<i>Utilization avoided</i>	<i>Costs avoided</i>
ED visits	557 ED visits	\$634,980
Hospitalizations	557 hospitalizations	
Hospital days	2,783 hospital days	\$6,501,088

Living Well is estimated to have saved \$1,446 per participant.

Estimates made based on most appropriate results to date—there is substantial variation around utilization effect sizes in previous studies, common to such research

Hypothetical Living Well impact

What if 5% of Oregonians with chronic disease (78,300) were enrolled in Living Well?

Potential Impact of Enrolling 5% of Eligible Oregonians

Living Well impact on	Estimated impact	
QALYs	2,138 years gained	
<i>Healthcare utilization</i>	<i>Utilization avoided</i>	<i>Costs avoided</i>
ED visits	11,119 ED visits	\$12,675,660
Hospitalizations	11,119 hospitalizations	
Hospital days	55,593 hospital days	\$129,865,248

Substantial program and logistic challenges of “ramping up”

Data availability and quality

	Common	Living Well	Ideal
Participant	Minimal	Demographics, self-reported conditions	Demographics, clinical and self-reported conditions
Symptoms/ quality of life	None or minimal	Estimates from similar settings	Pre- and post-surveys
QALYs/health status	None or minimal	Estimates from similar settings	Pre- and post-surveys
Utilization	None	Estimates from similar settings	Healthcare claims

Data drive conclusions, recommendations

What’s the difference? Just planning, staffing and money!

Data and sustainability

- The role of data go beyond clinical effectiveness
 - No comprehensive Oregon outcome data—requires extrapolation from other settings
 - substantial variation around utilization
 - less satisfying to policy makers, leaders
- Results *should* drive sustainability, integration
 - Business model based on clinical outcomes, cost, utilization, cost savings, comparative effectiveness
 - Living Well as integral to disease control
 - part of medical home, chronic care model
 - benefits and costs linked at clinical, health plan, state levels

“[R]esults of thorough evaluation...would be the most informative for statewide policy decisions.”

State of Oregon Living Well site:
<http://www.oregon.gov/DHS/ph/livingwell/index.shtml>

