Population Health Management Colloquium
Pre Conference Session

"Understanding Prevention from an Employer Perspective"

Ron Loeppke MD, MPH, FACPM, FACOEM
Vice Chairman
U.S. Preventive Medicine

President
American College of Occupational and Environmental Medicine (ACOEM)

March 17, 2014

Overview

- Delineate the Impact of the ACA and other Converging Trends that are advancing the business value of Prevention and Population Health Management (PHM) for Employers and other Stakeholders.
- Articulate the unique role of Preventive Medicine and PHM for Accountable Care Organizations and Patient Centered Medical Home initiatives
- Review the solid Business Case for why Employers are investing in PHM and prevention strategies.
- Analyze Published Results with Case Studies of reduced health risks and costs from comprehensive, Employer based PHM/Prevention initiatives.

Converging Trends Driving Employer Health Strategies

- Epidemiological Trends
- Political Trends
- Cultural Trends
- Financial Trends

Converging Trends Driving Employer Health Strategies

Epidemiological Trends:

- Growing Burden of Illness and Burden of Health Risk in the Population
- The Age Wave—*Silver Tsunami* about to hit the healthcare system

Converging Trends Driving Employer Health Strategies

Epidemiological Trends:

- The Age Wave—Silver Tsunami about to hit the healthcare system

Political Trends:

- Implications of the ACA
- ACOs/PCMH
- Medicare changes

Focusing on the "Health" in Health Reform Legislation

- National Prevention Strategy and Council
- Employer-Based Wellness Program Incentives for Employees
- Preventive Health Savings Act
- ACOs and PCMHs

Population Health Management is Fundamental to ACOs/PCMHs

Accountable Care Organizations (ACOs)

- Population based Care model with physicians and hospitals at Financial Risk
- Outcomes oriented, performance-based with aligned incentives
- Goal: improve value of health services, control costs, improve quality

Patient Centered Medical Home (PCMH)

- "Whole Population" and "Whole-person" orientation
- Integrated and Coordinated Care with more emphasis on quality
- Financial incentives for improving health as well as better clinical outcomes

The Fundamental Formula for Success

When you are at Financial Risk

for the Clinical/Health Risk of a Population:

Population Health Management

is the Fundamental Formula for Success

$$BH + BHC = GV\ (HQ/LC)$$

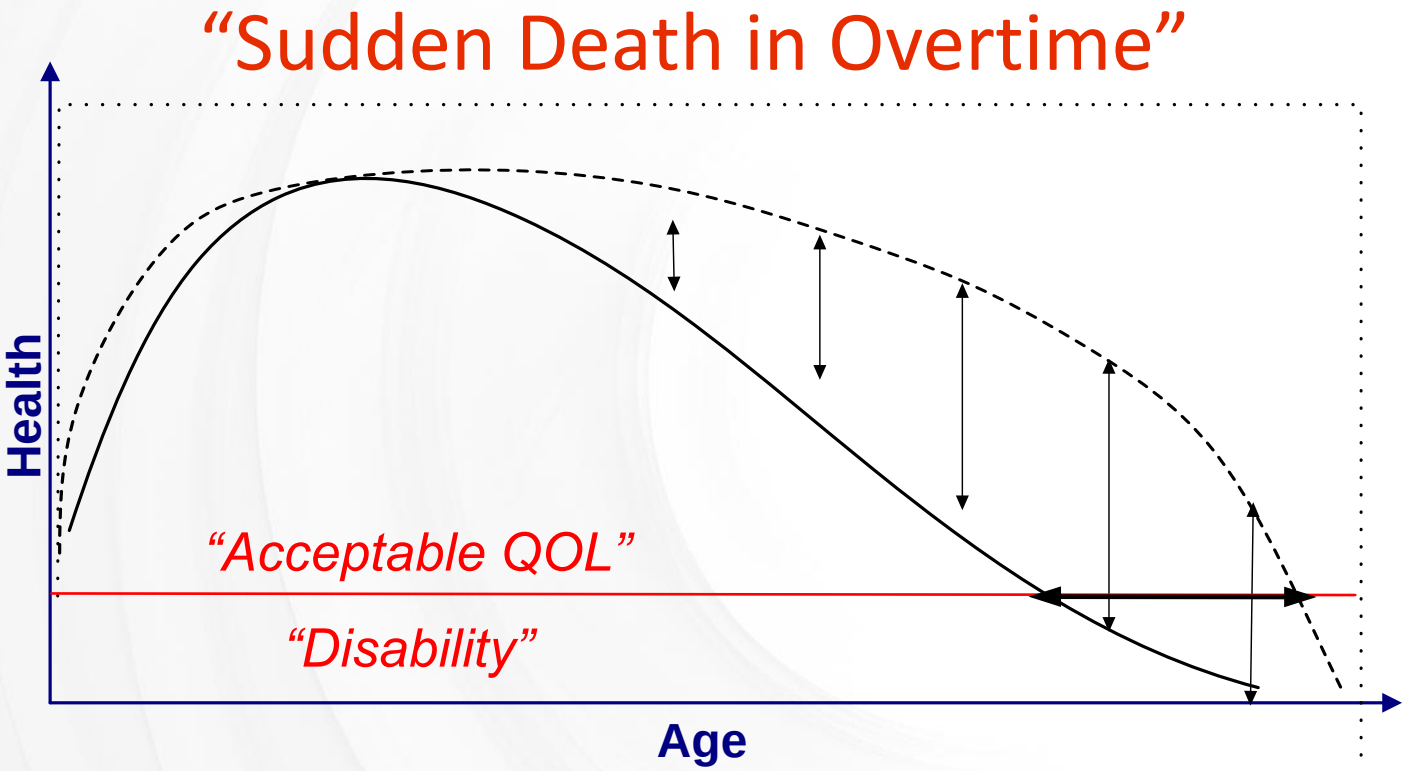
Better Health + Better Health Care = Greater Value (Higher Quality/Lower Cost)

Focusing on the "Health" in Health Reform Legislation

- National Prevention Strategy and Council
- Employer-Based Wellness Program Incentives for Employees
- Preventive Health Savings Act
- ACOs and PCMHs
- **Medicare Coverage of Annual Wellness Visit**
- **Medicare Better Health Rewards Act**
- **Congressional Briefing Jan 28, 2014**
  - ACOEM-NIOSH-CDC emerging study based on "Compression of Morbidity" and "graduating healthier retirees" to Medicare

Compression of Morbidity

Live Healthier Longer and Die more Suddenly at Lower Cost



The compression of morbidity relates to postponing the age of onset of morbidity, disability and cumulative health costs--even though life expectancy is increased--largely by reducing health risks

Hubert, Bloch, Oehlert and Fries. Lifestyle Habits and Compression of Morbidity. J Gerontol A Biol Sci Med. June, 2002; 57 (6) M347-51

Converging Trends Driving Employer Health Strategies

Epidemiological Trends:

- The Age Wave—Silver Tsunami about to hit the healthcare system
- Compression of Morbidity

Political Trends:

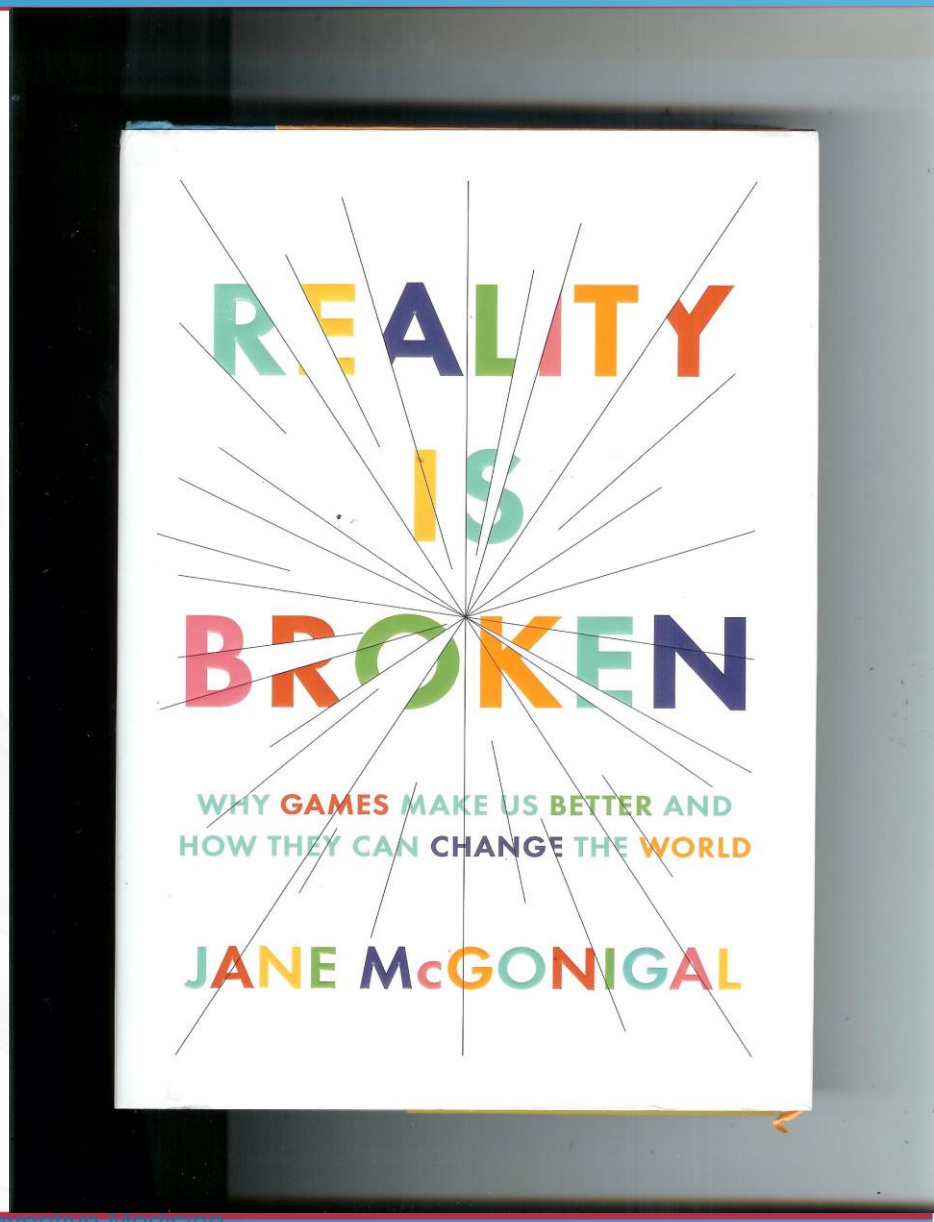
- Aligning Incentives among Consumers, Providers, Employers
- ACOs/P4P/PCMH…Consumer Centered Health Home

Cultural Trends:

- Well-Being is the new Green: The Ultimate Personal Sustainability Strategy
- Game Theory Innovations in Health and Prevention

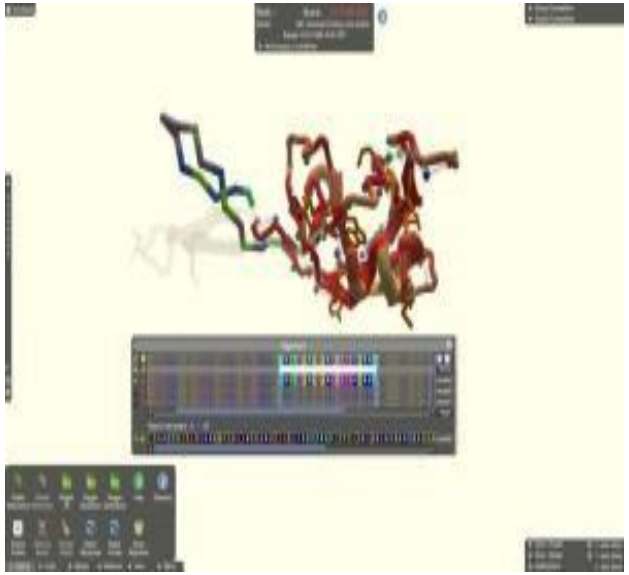
Gamification in Healthcare

- 183 M people are “Gamers” (> 13 hours per week)
- 97% of Youth play regularly
- 25% of > 50 y/o play regularly
- Prediction of Nobel Prize Winners in Medicine for Gamification in Health Management



Gamers Succeed Where Scientists Fail: Molecular Structure of Retrovirus Enzyme Solved, Doors Open to New AIDS Drug

- **Science Daily** — Gamers have solved the enzyme whose configuration had stumped scientists for more than a decade.



- The gamers achieved their discovery by playing *Foldit*, an online game that allows players to collaborate and compete in predicting the structure of protein molecules.

- They did it in only three weeks..

- The Center for Game Science, in the Department of Computer Science and Engineering at the University of Washington, is where gamers, students, scientists and scholars apply gaming principles and play games (like *Foldit*) to innovate scientific breakthroughs.

Converging Trends Driving Employer Health Strategies

- **Political Trends**
- **Epidemiological Trends**
  - The Age Wave—*Silver Tsunami* about to hit the shore of the healthcare system
  - Compression of Morbidity
- **Cultural Trends:**
  - Wellness is the new Green: The Ultimate Personal Sustainability Index
  - Social Networking/Game Theory Innovations in Healthcare
  - **Mobile/Wireless Technology Transforming the Healthcare Industry**

Mobile Technology: The World's most ubiquitous platform

More people have access to cell phones than drinking water, electricity or a toothbrush.

MOBILE DEVICES HAVE OVERTAKEN WORLDWIDE POPULATION.*

*Source: IMS Report: *The World Market for Internet Connected Devices, 2012.*

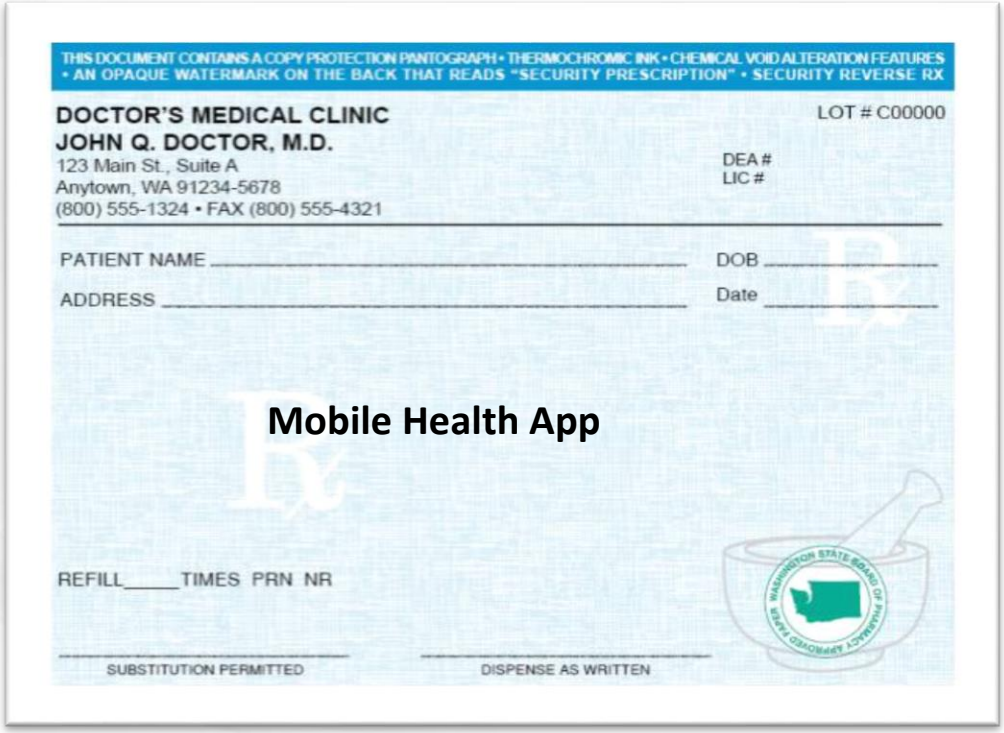
TRANSFORMING HEALTHCARE

By 2020, **~160 million Americans monitored and treated remotely for at least one chronic condition**

Johns Hopkins University. *Chronic Conditions: Making the Case for Ongoing Care*. Retrieved 10/20/12, from http://www.partnershipforsolutions.org/DMS/files/chronicbook2004.pdf

Prescription Mobile Health Apps - Wireless Engagement

- Poised to transform healthcare as we know it
- Always with you, always on
- Perpetual Connectivity/Communication
  - Information into Knowledge
  - Reminders/Notifications
  - Knowledge into Action
  - Clinical and Social support
  - Action into Results



Converging Trends Driving Employer Health Strategies

Epidemiological Trends:

- The Age Wave—Silver Tsunami about to hit the healthcare system
- Compression of Morbidity

Political Trends:

- Aligning Incentives among Consumers, Providers, Employers
- ACOs/P4P/PCMH…Consumer Centered Health Home

Cultural Trends:

- Wellness is the new Green: The Ultimate Sustainability Index for Companies
- Social Networking/Game Theory Innovations in Prevention/Wellness
- Wireless Technology Transforming the Healthcare Industry

Financial Trends

- **The Problem: The Cost Crisis is due for the most part to the Health Crisis**

Patients with chronic diseases account for 75% of U.S. healthcare costs

Of the $2 trillion spent on U.S. health care

Of every dollar spent…

…75 cents went towards treating patients with one or more chronic diseases

In public programs, treatment of chronic diseases constitute an even higher portion of spending:

More than 96 cents in Medicare…

…and 83 cents in Medicaid

Converging Trends Driving Employer Health Strategies

Epidemiological Trends:

- The Expanding Burden of Illness and Health Risk in the Population
- The Age Wave—Silver Tsunami about to hit the healthcare system

Political Trends:

- Aligning Incentives among Consumers, Providers, Employers
- ACOs/P4P/PCMH…Consumer Centered Health Home

Cultural Trends:

- Wellness is the new Green: The Ultimate Sustainability Index for Companies
- Social Networking/Game Theory Innovations in Prevention/Wellness
- Wireless Technology Transforming the Healthcare Industry

Financial Trends

- **The Problem: The Cost Crisis is due in large part to the Health Crisis**
- **The Bigger Problem: Total Cost Impact of Poor Health to Employers**

The Bigger Problem: The *Full* Cost of Poor Health

Personal Health Costs

Medical Care
Pharmaceutical costs

30%

Productivity Costs

Absenteeism

Short-term Disability
Long-term Disability

Presenteeism

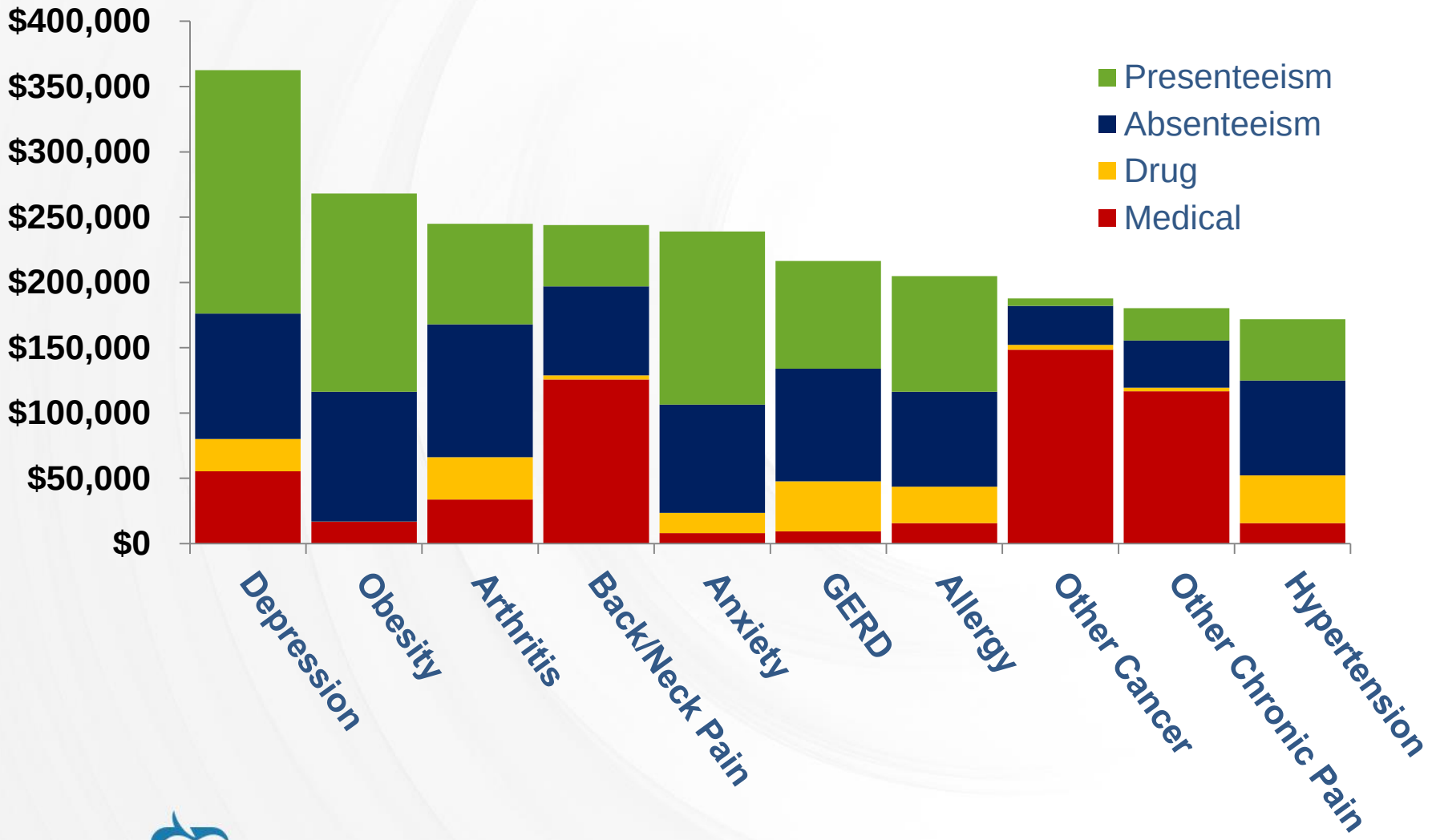
Overtime
Turnover
Temporary Staffing
Administrative Costs
Replacement Training
Off-Site Travel for Care
Customer Dissatisfaction
Variable Product Quality

70%

Sources: Loeppke, R., et al., "Health and Productivity as a Business Strategy: A Multi-Employer Study", JOEM.2009; 51(4):411-428. and Edington DW, Burton WN. Health and Productivity. In McCunney RJ, Editor. A Practical Approach to Occupational and Environmental Medicine. 3rd edition. Philadelphia, PA. Lippincott, Williams and Wilkens; 2003: 40-152

Health and Productivity (Absenteeism/Presenteeism) are inextricably linked

Top 10 Health Conditions by Full Costs
(Med + RX + Absenteeism + Presenteeism) Costs/1000 FTEs



Loeppke, R., et al., "Health and Productivity as a Business Strategy: A Multi-Employer Study". *JOEM*. 2009;51(4):411-428.

The Business Value of Better Health and Productivity

- Market cap value impact from regaining 1 Day of productivity per year per FTE
- 58,000 employees, current 8 Days per FTE of health-related productivity loss

1 Day per FTE of Regained Productivity =

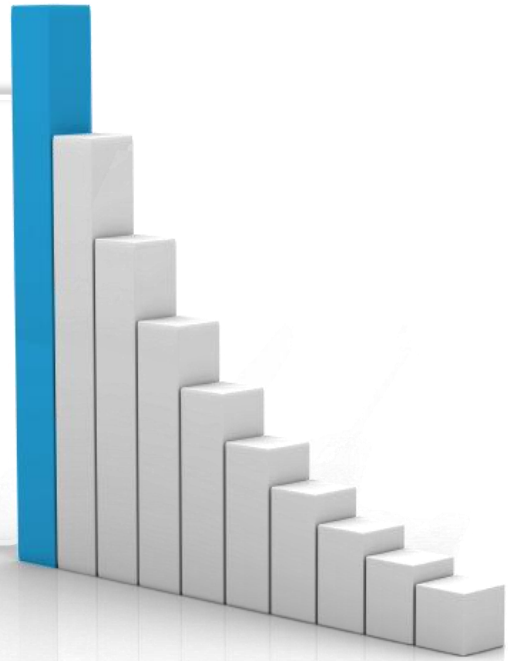
$18.8M EBITDA impact

13x (EBITDA Multiple)

$244.4M estimated market cap increase

÷ 292M shares

$0.84 in additional per share value



Loeppke R. “The Value of Health and the Power of Prevention”. Int J Workplace Health Manage. 2008; 1(2)95-108.

Converging Trends Driving Employer Health Strategies

Epidemiological Trends:

- The Expanding Burden of Illness and Health Risk in the Population
- The Age Wave—Silver Tsunami about to hit the healthcare system

Political Trends:

- Aligning Incentives among Consumers, Providers, Employers
- ACOs/P4P/PCMH…Consumer Centered Health Home

Cultural Trends:

- Wellness is the new Green: The Ultimate Sustainability Index for Companies
- Social Networking/Game Theory Innovations in Prevention/Wellness
- Wireless Technology Transforming the Healthcare Industry

Financial Trends

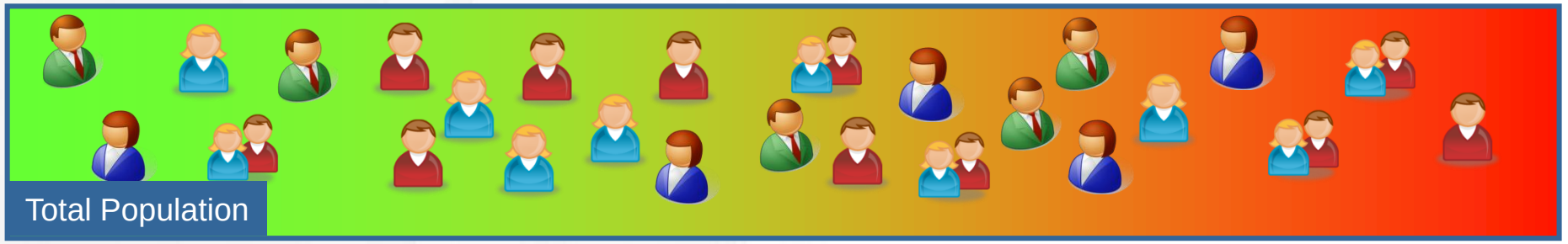
- **The Problem: The Cost Crisis is due in large part to the Health Crisis**
- **The Bigger Problem: Total Cost Impact of Poor Health to Employers**
- **The Solution: Evidence Based Prevention/Population Health Management**

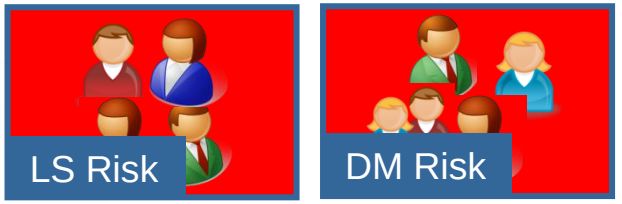
Population Health Management = Preventive Medicine

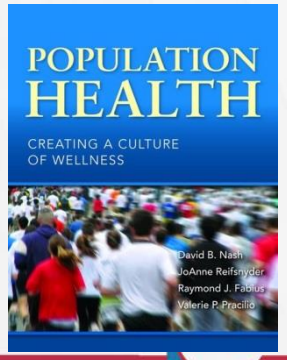
PRIMARY PREVENTION
Wellness/Health Promotion

SECONDARY PREVENTION
Screening/Early Detection

TERTIARY PREVENTION
Early Intervention/Care Mgmt







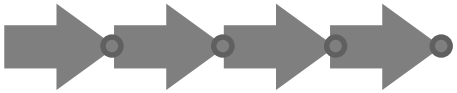
Loeppke, R. “Making the Case for Population Health Management: The Business Value of Better Health,” Chapter 7, pp 121-136 in Nash, D., et.al., *Population Health* Textbook. Jones and Bartlett Learning. Sudbury, MA. 2010.

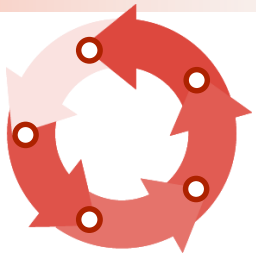
Data Analytics Engine

Data Analysis

Clinical Guidelines

Validated Methodology





Member Risks

Member Risks

Total Medical and Pharmacy Claims Costs for an Employer

Total Claims Paid between 6/1/2012 - 5/31/2013	
Total Eligible	60,668
Medical Paid	$ 94,318,172.00
Rx Paid	$ 30,836,368.78
Total Paid	$125,154,540.78

Certain Medical Condition Prevalence in Employer Population

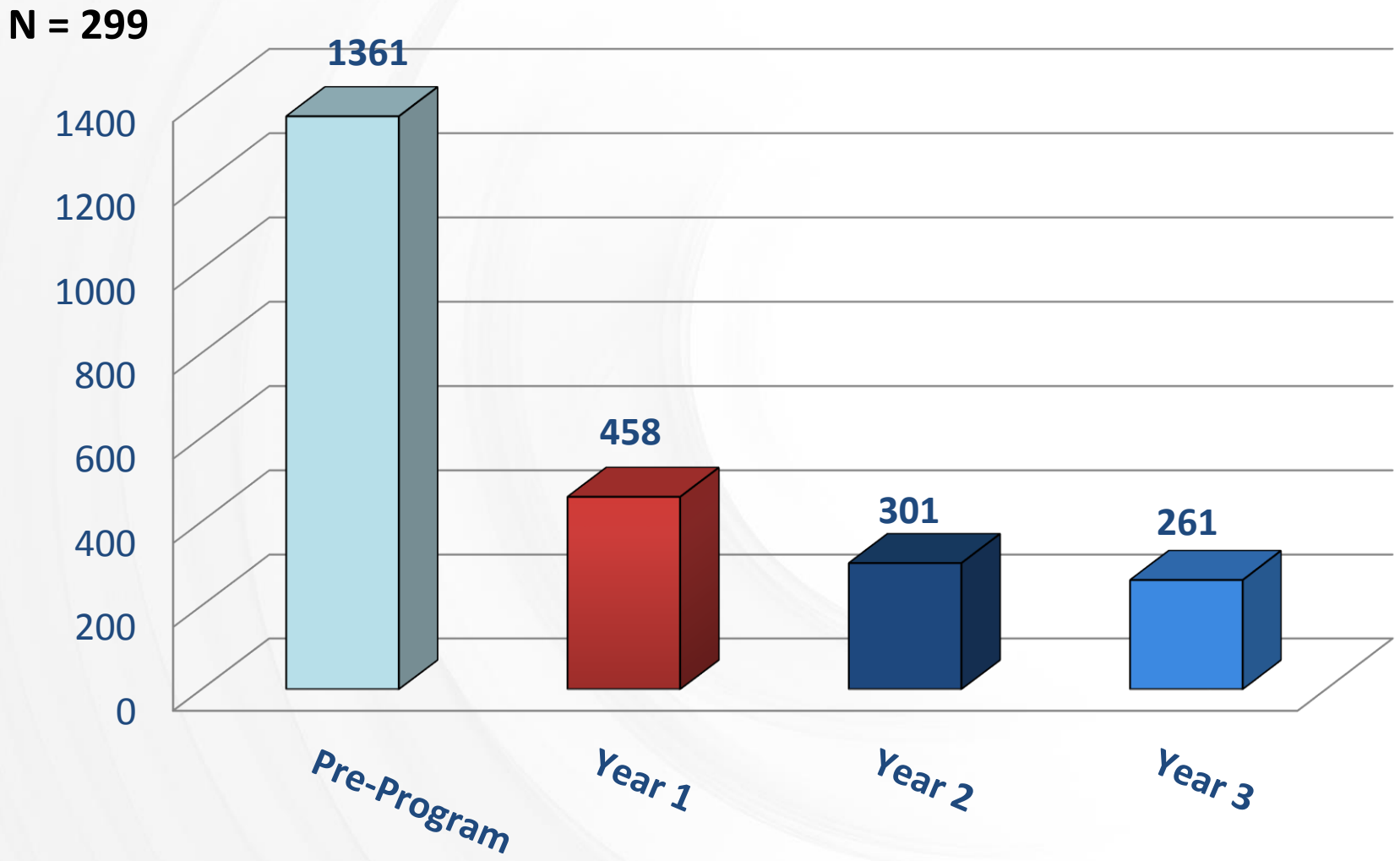
Time period of 6/1/12 - 5/31/13

Condition	Members	PMPM	PMPY	Total Paid
HTN	4575	$445.83	$5,349.96	$24,476,067.00
Diabetes	1638	$518.50	$6,222.00	$10,191,636.00
Depression	1450	$536.31	$6,435.72	$9,331,794.00
Asthma	1601	$393.63	$4,723.56	$7,562,419.56
CAD	535	$810.82	$9,729.84	$5,205,464.40
COPD	333	$774.82	$9,297.84	$3,096,180.72
CHF	112	$1,296.08	$15,552.96	$1,741,931.52
			Total Cost for 7 Conditions	$61,605,493.20

Example of USPM Health Intelligence CARE GAPS

	GAPS in EVIDENCE BASED CARE		
Condition	**Care Guide**	**Care Guide Total**	**Condition Total**
Asthma	Patients with asthma related ER visit	151	4560
Asthma	Patients with asthma related hospitalization	139	4560
Asthma	Patients without inhaled corticosteroids or leukotriene inhibitors	2765	4560
Asthma	Patients without office visit	543	4560
Congestive Heart Failure	Patients with CHF or pulmonary edema related ER visit	96	722
Congestive Heart Failure	Patients with CHF or pulmonary edema related hospitalization	252	722
Congestive Heart Failure	Patients without ACE inhibitors or ARBs (HEDIS)	329	722
Congestive Heart Failure	Patients without beta-blocker drugs (HEDIS)	271	722
Congestive Heart Failure	Patients without LDL-C or lipid profile test in the last 12 months	611	722
Congestive Heart Failure	Patients without office visit	311	722
Congestive Heart Failure	Patients without office visit in the last 12 months	577	722
Depression	Patients taking SSRI and bupropion	235	3842
Depression	Patients with depression related ER visit	121	3842
Depression	Patients with depression related hospitalization	251	3842
Depression	Patients without office visit in the last 12 months	2156	3842
Diabetes	Patients with antiplatelet agent (HEDIS)	329	1638
Diabetes	**Patients without HbA1c test in the last 12 months**	**525**	**1638**
Diabetes	Patients without lipid profile test in the last 12 months	647	1638
Diabetes	Patients without nephropathy screening in the last 12 months	1033	1638
Diabetes	Patients without retinal eye exam in the last 12 months	103	1638

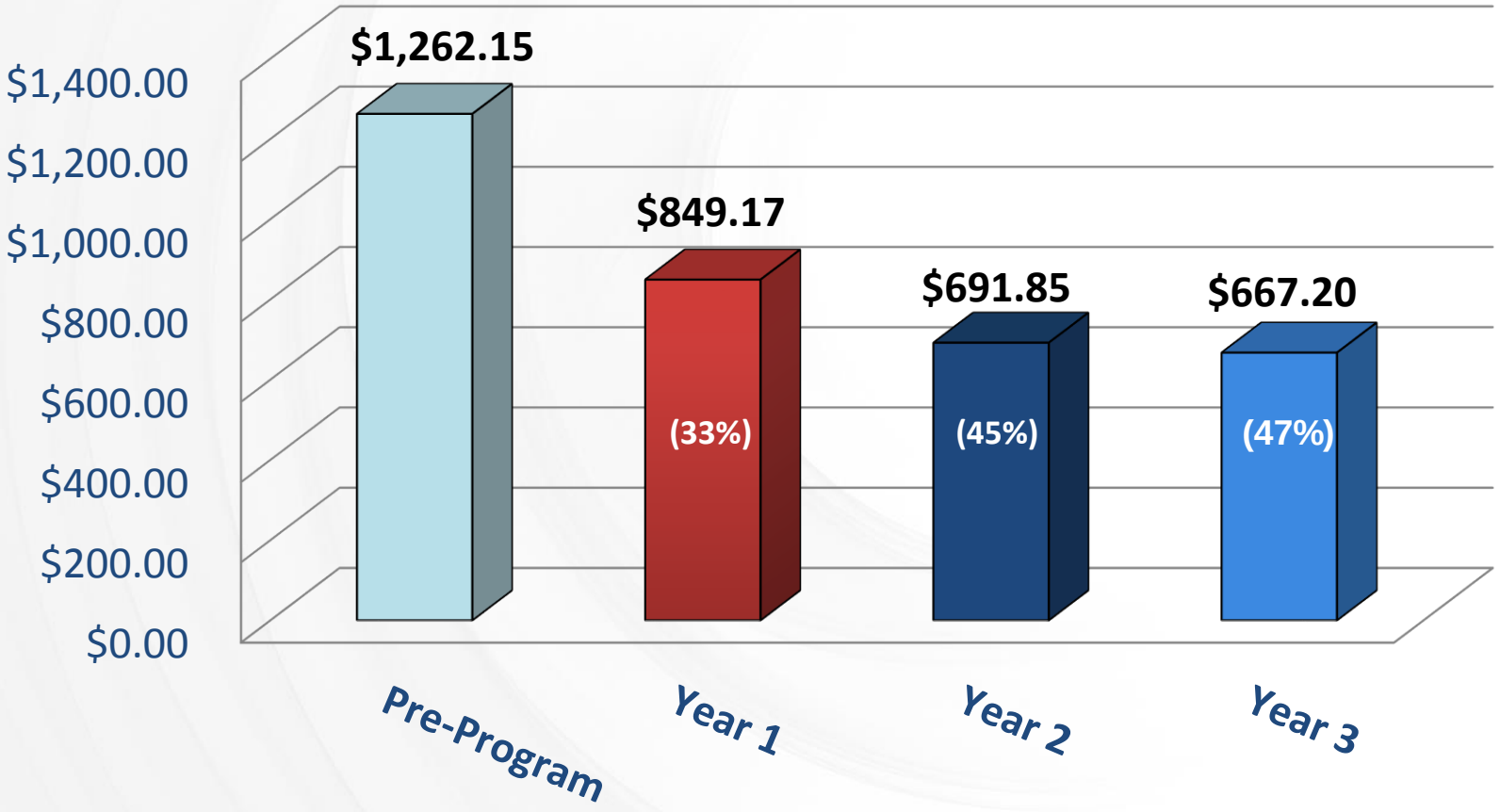
USPM Diabetes Care Management Client Case Study: Inpatient Days per 1000 Members per Year across 3 Years in Program



USPM Diabetes Care Management Client Case Study: *Total Costs Per Diabetic Per Month across 3 Years in Program

N = 299

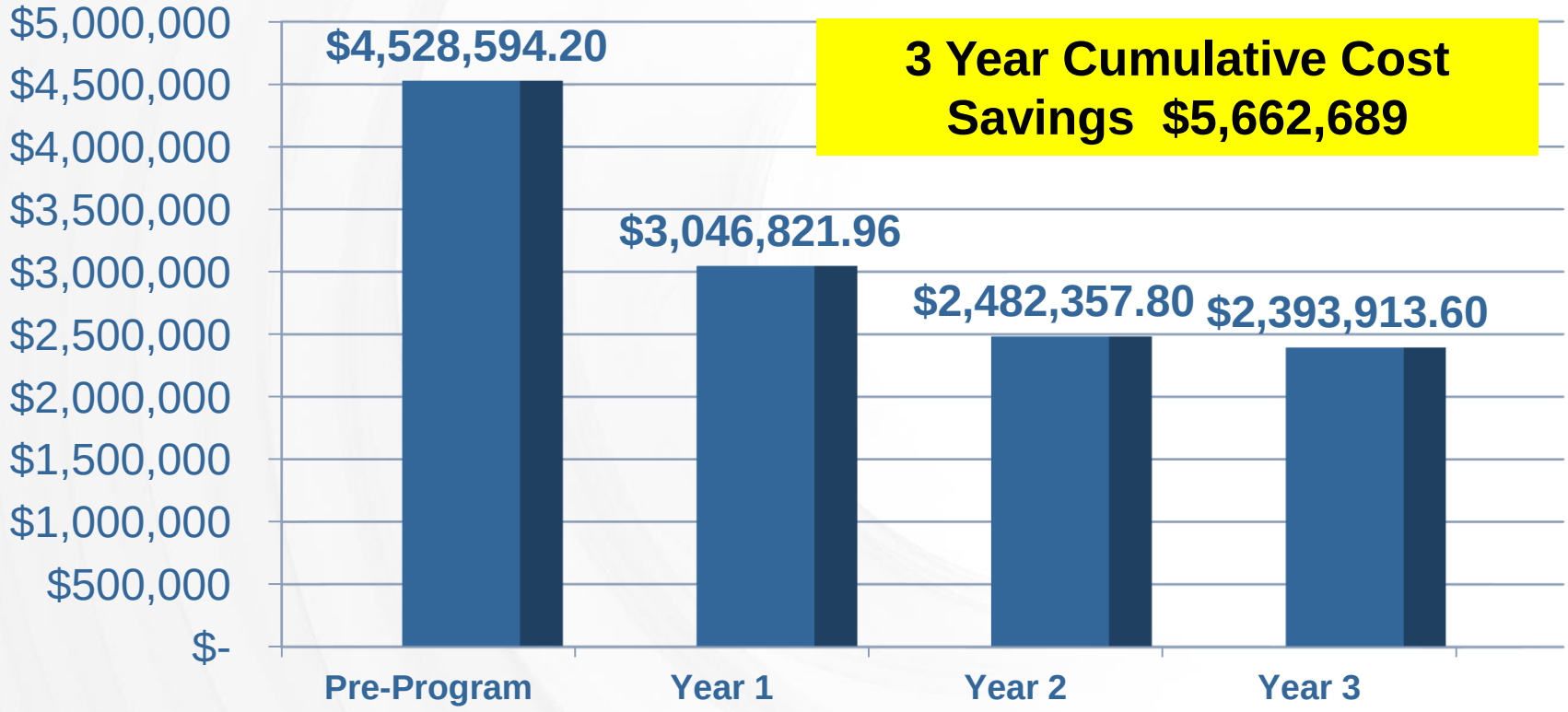
***Total Costs Include Medical/Rx Claims Costs as well as the Costs of the USPM Diabetes Care Management Program**



USPM Diabetes Care Management Client Case Study:
*Total Annual Costs for 299 Diabetics across 3 Years in Program

N = 299

*Total Cost Savings even after Accounting for the Costs of the USPM Diabetes Care Management Program



Full Text
OVID

March 2013 ○ Volume 55 ○ Number 3

www.joem.org

JOEM

Journal of Occupational and Environmental Medicine

AMERICAN COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE

Wolters Kluwer Health | Lippincott Williams & Wilkins

The Association of Technology in a Workplace Wellness Program With Health Risk Factor Reduction

Ron Loeppke, MD, MPH, Dee Edington, PhD, Joel Bender, MD, PhD, MSPH, and Ashley Reynolds, MSN, RN

Objective: Determine whether there is a relationship between level of engagement in workplace wellness programs and population/individual health risk reductions. **Methods:** A total of 7804 employees from 15 employers completed health risk appraisal and laboratory testing at baseline and again after 2 years of participating in their personalized prevention plan. Population and individual health risk transitions were analyzed across the population, as well as by stage of engagement. **Results:** Of those individuals who started in a high risk category at baseline, 46% moved down to medium risk and 19% moved down to low risk category after 2 years on their prevention plan. In the group that only engaged through the Web-based technology, 24% reduced their health risks ($P < 0.0001$). **Conclusions:** Engaging technology and interactive Web-based tools can empower individuals to be more proactive about their health and reduce their health risks.

Chronic illness and health care costs are advancing at a staggering rate worldwide. The World Economic Forum, in its *Global Risk 2010* report, indicated that the impact on developing countries as well as advanced economies from the "silent pandemic" of chronic illnesses (like diabetes, heart disease, and cancer) is a critical global risk that is destructive and debilitating to individuals as well as nations and that the only sustainable solution is a greater emphasis on prevention. These dramatic increases are largely attributable to lifestyle- or behavior-related causes such as unhealthy eating habits, smoking, or sedentary lifestyles. Given the converging epidemiological, political, cultural, and financial trends, driving accountable care organizations and patient-centered medical home initiatives is the need for better health at lower cost. This requires a sustainable prevention strategy in concert with effective population health management interventions to reduce the growing burden of health risks leading to the expanding burden of chronic illness as not only a fiscal imperative but also a clinical and moral imperative.[1–3]

The current sick care model in the United States is not designed to meet the real health and wellness needs of people. Therefore, employers fund the majority of the economic burden of this broken system, because they pay for the ever increasing costs of medical care while our system spends less than $0.05 of every health care $1.00 on prevention to help promote a healthier, safer, more productive workforce. A large percentage of 137 million employees in the United States receive health benefits at work; therefore, employers have a unique opportunity to play a stronger role because lifestyle risks and medical conditions directly influence productivity. Workplace health and wellness initiatives now reach millions of workers, with occupational health professionals designing and delivering wellness and prevention services typically impacting employees many hours per month compared with the minutes spent in a primary care physician's office each year. Occupational health providers are a critical medical resource for the nation's workers and their dependents. With its emphasis on prevention, the relevance of occupational health and its sphere of influence on population health management are a great resource of medical support for patient-centered medical homes and accountable care organizations. By embracing a prevention and health promotion strategy, employers have the capability and expertise to meet the challenges of creating a more resilient, healthier workforce and improving their bottom line.

US Preventive Medicine, Inc (Brentwood, TN), has created an innovative information technology solution for a personalized prevention solution, the Prevention Plan. The Prevention Plan leverages social cognitive concepts such as efficacy building and self-regulatory mechanisms like goal setting and self-monitoring, which facilitate health behavior change.[4] This Web-based prevention plan allows individual users to complete a health risk appraisal (HRA), biometric reporting, and laboratory testing to develop a customized prevention plan. The plan provides users with knowledge of their health risks as well as suggestions to reduce those risks. In addition, each user is provided a suite of support tools, recommended risk-reduction activities, and information that allows them to translate knowledge into action.

Users were able to complete an HRA, virtual coaching, live coaching, or social challenges to reduce their risks and were able to determine for themselves what level of engagement they preferred. All coaching programs were structured using risk-based educational modules. Live coaches completed these modules telephonically, while virtual coaching was completed using the same content, through self-directed online programs. Both coaching interventions used recommended action programs related to the risks identified from the risk appraisal, laboratory testing, and biometric screening. They were focused on identification of barriers, goal setting, and self-monitoring activities aimed at increasing self-efficacy. Live coaches used motivational interviewing as a method for engaging members in the coaching process, which was the only significant difference from the virtual coaching intervention.

NATURAL FLOW OF HEALTH RISK

The tool used to initiate awareness of health, determine health risk status of populations, and raise consciousness about health is the HRA. The health risks and cutoff points used in the HRA have been described previously.[5] The most commonly used risk stratification is low-risk status (zero to two risk factors), medium-risk status (three to four risk factors), and high-risk status (five or more risk factors). The first HRA provides baseline information to individuals, with future HRAs indicating the direction individuals are moving on a continuum of health.[6] The transition of individuals or percentage of individuals moving from one risk status to another when individuals are not engaged in wellness programs has been described by Dr Dee Edington as the natural flow of health risks. The transitions are measured using Markov chain analyses, a mathematical technique used to examine longitudinal data from the same individuals, which is described in our previous work.[7] The risk transitions for the population studied in this article were also analyzed using this same type of Markov chain analyses. It becomes obvious from the diagrams used to display the risk transitions that slowing upward migration into

From US Preventive Medicine, Inc (Drs Loeppke and Bender and Mr Reynolds), Brentwood, Tenn; and Health Management Research Center (Dr Edington), University of Michigan, Ann Arbor.

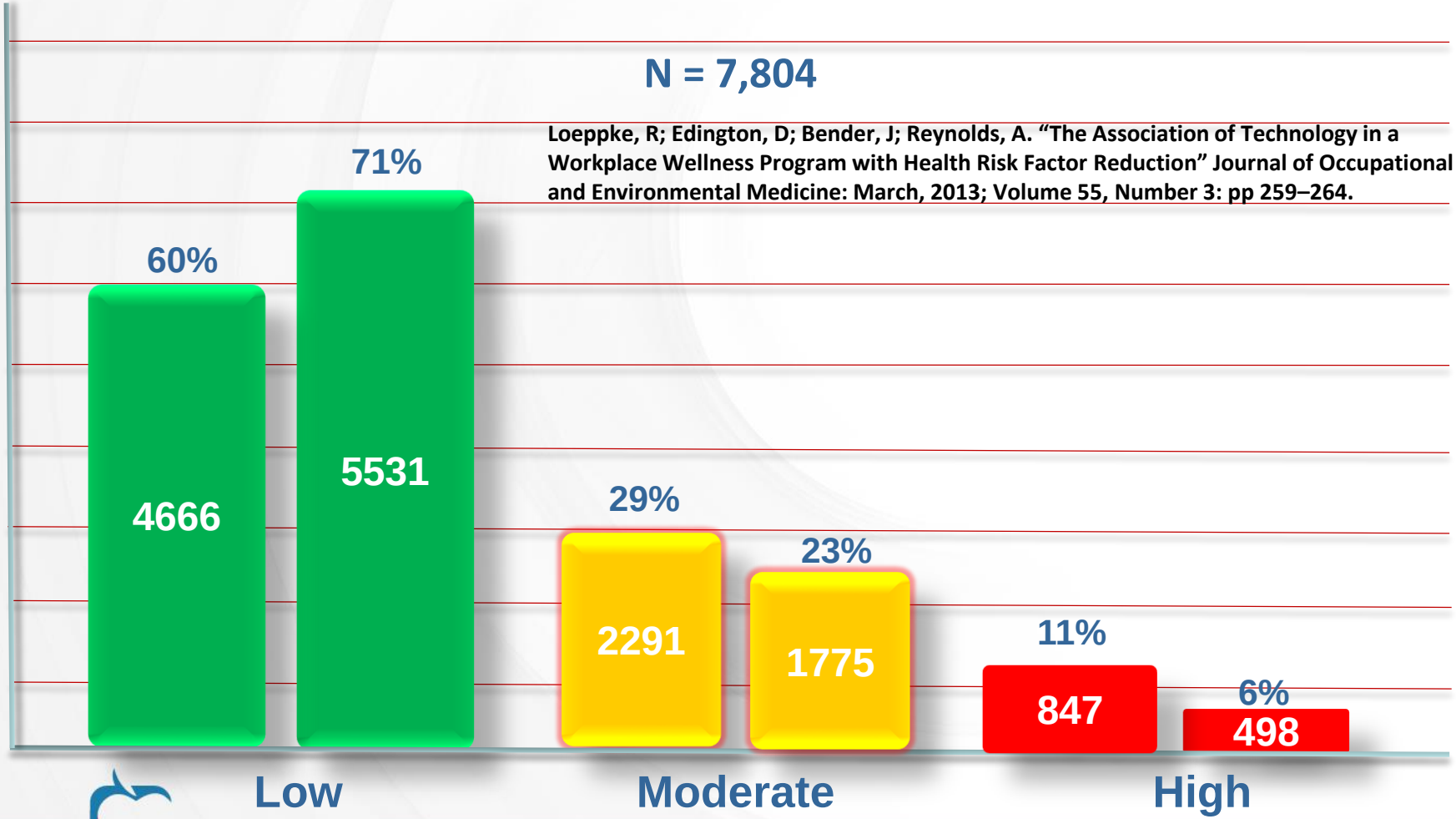
The authors declare no conflict of interest. No funding was received. Dr Ron Loeppke, Dr Joel Bender, and Mr Ashley Reynolds are employees of US Preventive Medicine, Inc, and Dr Dee Edington is a consultant and member of the US Preventive Medicine International Advisory Board.

Address correspondence to: Ron Loeppke, MD, MPH, 5166 Remington Dr, Brentwood, TN 37027 (RLoeppke.MD@USPM.com).

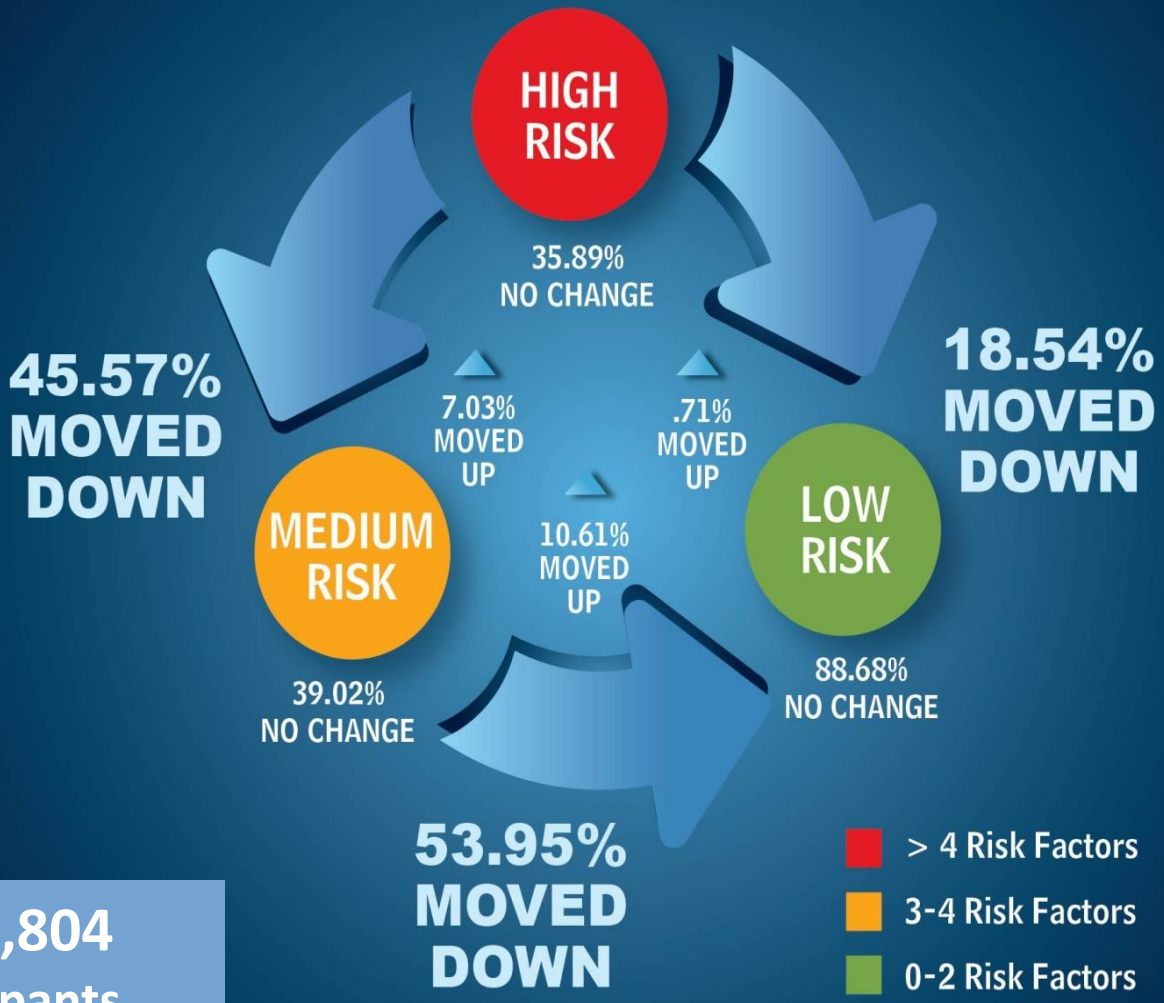
DOI: 10.1097/JOM.0b013e3182898639

Significant Overall Health Risk Reduction of Population Participating in their personalized Prevention Plan for 2 Years

Net Movement of Health Risk Levels in Cohort Baseline vs Year 2 on Prevention Plan



Population Health Risk Transitions after 2 Years on a personalized Prevention Plan



N = 7,804 Participants

Loeppke, R; Edington, D; Bender, J; Reynolds, A. "The Association of Technology in a Workplace Wellness Program with Health Risk Factor Reduction" Journal of Occupational and Environmental Medicine: March, 2013; Volume 55, Number 3: pp 259–264

Individual Health Risk Reductions after Participating in their Personalized Prevention Plan for Two Years (Total N = 7,804)

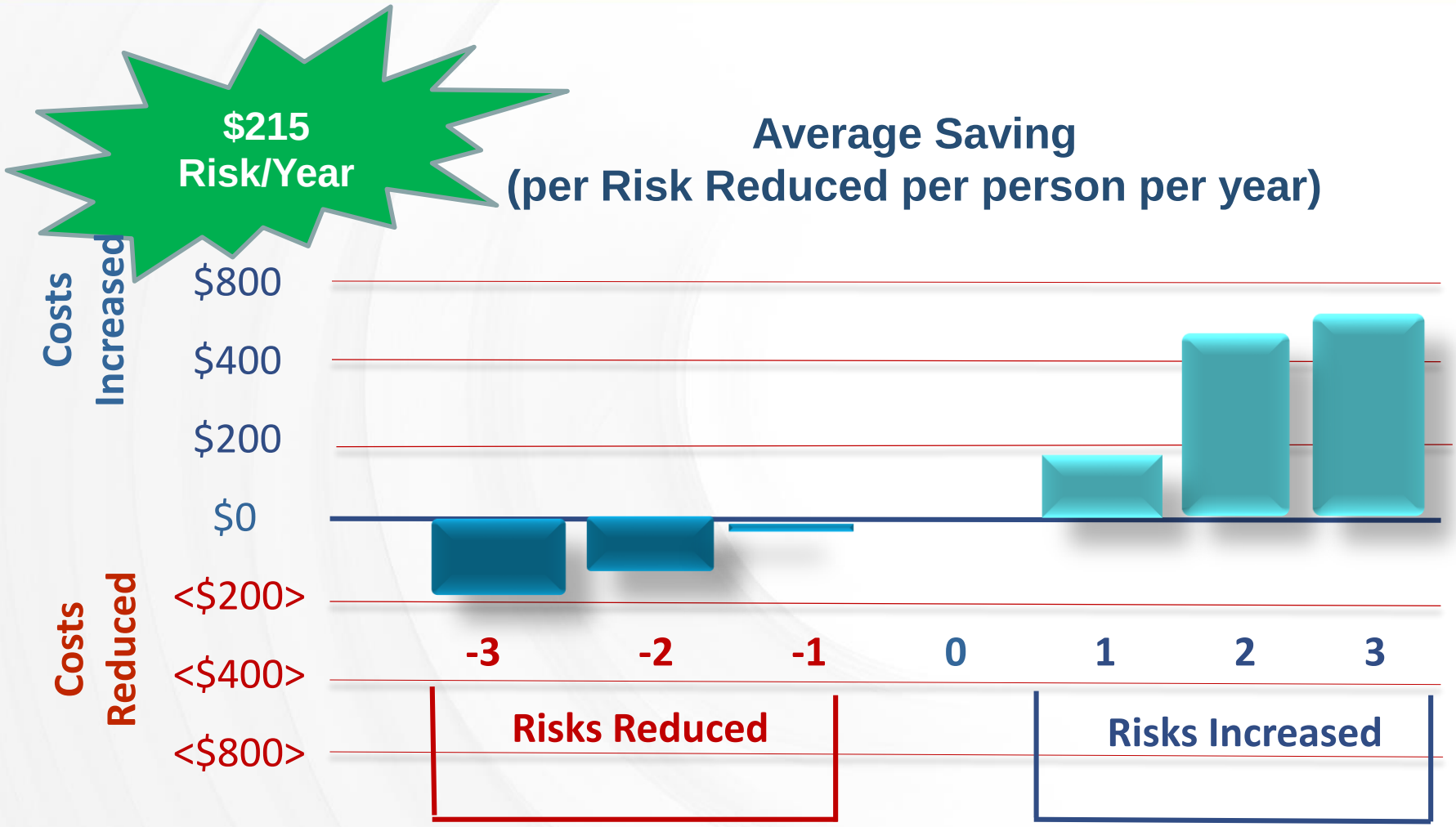
Individual Risks	# People and % of overall population (7804) with High Risk in Baseline Year	# People and % of the Baseline High Risk Group remaining High Risk after Year 2	# People and % of the Baseline High Risk Group Reducing Risk out of High Risk after Year 2
Blood Pressure	923 (12%) (M=142/90)	179 (19%) (M=143/90)	744 (81%) (M=123/77)
HDL	328 (4%) (M=31)	134 (41%) (M=30)	194 (59%) (M=41)
Cholesterol	836 (11%) (M=263)	353 (42%) (M=265)	483 (58%) (M=208)
Fasting Blood Glucose	1616 (21%) (M=116)	926 (57%) (M=123)	690 (43%) (M=92)
Body Mass Index (BMI)	3338 (43%) (M=33)	2937 (82%) (M=34)	401 (12%) (M=26)

Loeppke, R; Edington, D; Bender, J; Reynolds, A. "The Association of Technology in a Workplace Wellness Program with Health Risk Factor Reduction" Journal of Occupational and Environmental Medicine: March, 2013; Volume 55, Number 3: pp 259–264

“As Health Risks Go, So Go Health Costs”

Dr. Dee Edington – Zero Trends

Reduced Risk → Reduced Cost

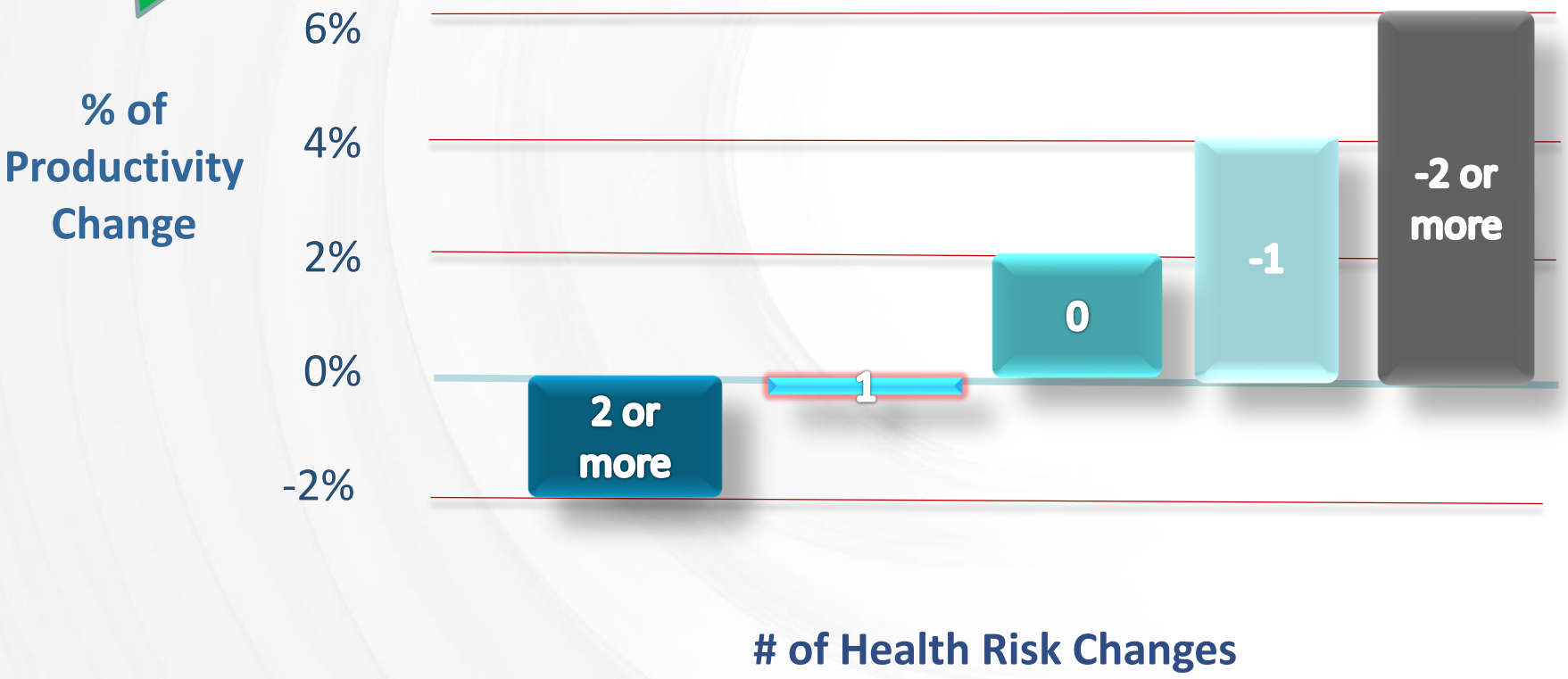


Source: Edington, *Zero Trends,* 2009 and Edington, AJHP. 15(5):341-349, 2001.

Reduced Risk → Improved Productivity

$950 Risk/Year

Average Productivity Savings (per Risk Reduced per person per year)



Source: Burton, W. et. al. The Association of Health Risk Change and Presenteeism Change. JOEM. Volume 48, Number 3, March 2006, pp 252-263.

Physician and Employee Aligned Incentives: Accountable Care

Example of qualifications for Physicians to receive incentive:

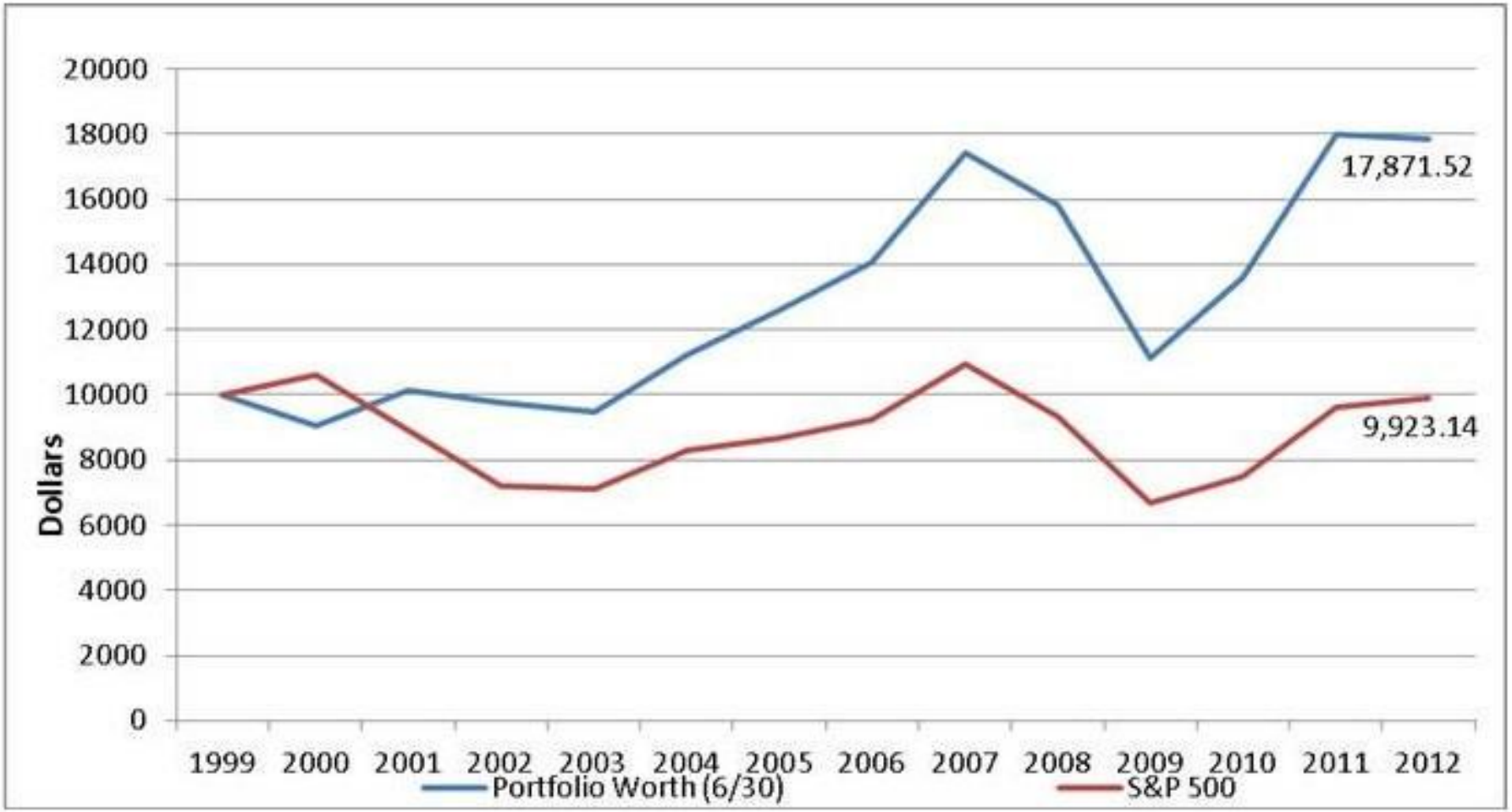
Evidence Based Medicine Quality Criteria	Quality Points
Physician Reviewing HRA with Patient	2
Preventive screenings (i.e. mammograms, colon cancer screenings)	1
Disease-specific treatment and monitoring – eg. Diabetics receiving HbA1C at least every 6 months	1
Diabetics – Maintain participation in Disease Management or Lifestyle Management program per EBM criteria	5
Lipid management – on medications as appropriate	4

- **Bonus Pool Claims Cost Savings & Lost Work Time Savings (1:1)**
- **Quality Points Value**
  - Evidence Based Medicine Quality Indicators = # Quality Points
  - 1 Quality Point = $19.39

Loeppke R, Nicholson S, et al. "The impact of an integrated population health enhancement and disease management program on employee health risk, health conditions and productivity". *Population Health Management.* 2008: 11(6); 287-296.

The Linkage: Healthy Companies drive Healthy Bottom Lines

CHAA vs. S&P 500 Performance Comparison 1999-2012



Fabius R, et al. The link between workforce health and safety and the health of the bottom line: Tracking market performance of companies that nurture a "culture of health." *J Occup Environ Med*. 2013;55(9):993-1000.

The Bottom Line

Good Health

is

Good Business

from the Exam Room

To

the Board Room