Articulate how to leverage the Power of Prevention with the Tools of Technology

Delineate the Converging Trends that are advancing the value of population health management for Employers, ACOs/PCMHs, Physicians and Consumers

Review the solid Business Case for why employers are investing in Prevention and Population Health Management

Analyze published outcome studies and ROIs from comprehensive Prevention and Population Health Management initiatives.
Converging Trends Driving the Demand for Prevention

- Epidemiological Trends
- Political Trends
- Cultural Trends
- Financial Trends
Converging Trends Driving the Demand for Prevention

Epidemiological Trends:

- The Growing Economic Burden of Illness and Health Risks in Society
Healthcare Costs: Which Matters More
Age or Health Risk?

Annual Medical Costs

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Low (0)</th>
<th>Med Risk ($2,193)</th>
<th>High ($5,710)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-34</td>
<td>$1,776</td>
<td>$2,565</td>
<td>$5,114</td>
</tr>
<tr>
<td>35-44</td>
<td>$2,193</td>
<td>$3,353</td>
<td>$5,710</td>
</tr>
<tr>
<td>45-54</td>
<td>$2,740</td>
<td>$4,620</td>
<td>$7,991</td>
</tr>
<tr>
<td>55-64</td>
<td>$3,734</td>
<td>$6,625</td>
<td>$10,785</td>
</tr>
<tr>
<td>65-74</td>
<td>$4,613</td>
<td>$7,989</td>
<td>$11,909</td>
</tr>
<tr>
<td>75+</td>
<td>$5,756</td>
<td>$8,927</td>
<td>$11,965</td>
</tr>
</tbody>
</table>

As Health Risks go so go Health Costs

Dr. Dee Edington
Zero Trends
Converging Trends Driving the Demand for Prevention

Epidemiological Trends:

- The Growing Burden of Illness and Burden of Health Risks in Society
- The Positive Potential of the Compression of Morbidity
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. 

Epidemiological Trends:

• The Growing Burden of Illness and Burden of Health Risks in Society
• Compression of Morbidity

Political Trends:

• Bipartisan Support for Prevention
• Aligning Incentives among Consumers, Providers, Employers
• ACOs/P4P/PCMH... and ultimately the Consumer Centered Health Home
Focusing on the “Health” in Health Reform Legislation

- National Prevention Strategy and Council
- Employer-Based Wellness Program Incentives for Employees
- Grants for Small Businesses to Provide Workplace Wellness
- ACOs and PCMHs
- Medicare Coverage of Annual Wellness Visit
- Medicare Better Health Rewards Program
Converging Trends Driving the Demand for Prevention

Epidemiological Trends:
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Political Trends:
• Aligning Incentives among Consumers, Providers, Employers
• ACOs/P4P/PCMH...Consumer Centered Health Home

Cultural Trends:
• Wellness is the new Green: Ultimate Personal Sustainability
• Social Networking/Game Theory Innovations in Healthcare
Gamers Succeed Where Scientists Fail: Molecular Structure of Retrovirus Enzyme Solved, Doors Open to New AIDS Drug

Science Daily (Sep. 19, 2011) — Gamers have solved the structure of a retrovirus 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 breakthroughs in fields as diverse as biology, education and nanotechnology.
Converging Trends Driving the Demand for Prevention

**Epidemiological Trends:**
- The Growing Burden of Illness and Burden of Health Risks in Society
- Compression of Morbidity

**Political Trends:**
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**Cultural Trends:**
- Wellness is the new Green: The Ultimate Personal Sustainability Index
- Social Networking/Game Theory Innovations in Wellness
- Mobile/Wireless Tech, EMRs, etc. Transforming the Healthcare Industry
Globally, more people have access to cell phones than drinking water, electricity or a toothbrush.

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

Prescription 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
Mobile Health Manager Kits

Diabetes

CHF

COPD/Asthma

Wellness & Prevention
Mobile Health Manager for Diabetes: In Development

Mobile Diabetes Manager
by U.S. Preventive Medicine

User Name
Password
Login
Forgot User Name
Forgot Password

Tour the App
Join Now

Mobile Diabetes Manager

Blood Glucose
- Last Reading: 107 mg/dL
- Pre-Meal Goal: 90-115 mg/dL
- Post-Meal Goal: 130-155 mg/dL
- Next Reading Due: 5:00 PM

Learn
Cholesterol
- Your Stroke Risk Can Shrink With 7 Lifestyle Changes
- Certain lifestyle changes could greatly reduce your stroke risk, according to a new study.

ACT
Heart Rate
- Meditate Three Times This Week
- It’s time to get engaged this week! Tap to begin, and you will collect a few valuable points too.

Learn
Diabetes
- Diabetes
- Diabetes Prevention
- Diabetes Mellitus

Video
- Diabetes
- Diabetes Prevention
- Diabetes Mellitus

News
- New Insulin Pump Cuts Odds of Overnight Hypoglycemia
- Diabetes Doesn’t Seem to Affect Alzheimer’s Progression
- Vision Problems in U.S. Rise, Diabetes May Explain Why

Learning Programs
- Back Pain
- Weight Management
- Exercise and Activity
- Stress Management

Health Library
Mobile Diabetes Manager: Physician Summary Report

- **Glucose**
  - Target Range
  - % on Target
  - Highest/Lowest reading
  - Avg Glucose overall
  - Avg pre/post meal glucose

- **Weight**
  - Current + Goal

- **Exercise**
  - Avg weekly minutes
  - % Goal
  - Most frequent activity

- **Nutrition**
  - Avg calories + carbs / day

- **Medication**
  - Current List
  - # missed doses
  - % adherence

- **Diabetes Health Checklist Items**
Converging Trends Driving the Demand for Prevention

Epidemiological Trends:
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• Mobile/Wireless Tech, e-PHRs, etc. Transforming the Healthcare Industry

Financial Trends
• The Problem: The Cost Crisis is largely due to the Health Crisis
Of the $2 trillion spent on U.S. health care

Of every dollar spent…

More than 96 cents in Medicare…

…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:

...and 83 cents in Medicaid

“The United States cannot effectively address escalating health care costs without addressing the problem of chronic diseases.”

-- Centers for Disease Control and Prevention
Converging Trends Driving the Demand for Prevention

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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

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

Evidence Based Preventive Medicine is a Key Solution

Centers for Disease Control and Prevention has found that:

- 80% of Heart Disease and Type II Diabetes as well as
- 40% of Cancer are *Preventable*

- if people just:
  - stopped smoking,
  - ate healthy and
  - exercised
“Give it to me straight, Doc. How long do I have to ignore your advice?”
The Fundamental Formula for Success

\[ BH + BHC = LC \]

Better Health + Better Health Care = Lower Cost

When Financial Risk is linked to Clinical Risk

Outcomes will Drive Incomes

Population Health Management is the Key
Technology in a Workplace Wellness Program

March 2013 • Volume 55 • Number 3

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

Ron Loepke, MD, MPH, Doe Edington, PhD, Joel Bender, MD, PhD, MSPh, and Ashley Reynolds, MHN, EN

Objective: Determine whether there is a relationship between level of engagement in workplace wellness programs and reductions in health risk factors. Methods: A total of 1,791 employees from 13 employers completed health risk appraisals and laboratory testing at baseline and again after 2 years of participating in the program. Participants were stratified into low- and high-risk groups, and the outcomes were analyzed within these groups. Results: Participants in the high-risk group who engaged with the technology had a 12% reduction in health risk factors compared to a 1% reduction in those who did not engage with the technology. Conclusions: Engaging workers with technology-based tools can empower employees to be more proactive about their health and reduce their health risks.

Cecile Brough, RN, Janet Joynt, RN, MSL, and Patryck Jo, RN, MSL

NATURAL FLOW OF HEALTH RISK

The natural flow of healthy risk reductions results in a decrease in health risk factors over time. A significant reduction in health risk factors can be achieved through a combination of healthy behaviors and lifestyle changes. The natural flow of health risk reductions can be observed through the implementation of workplace wellness programs and the adoption of healthy behaviors and lifestyle changes. These programs can be designed to promote healthy behaviors and lifestyle changes and to reduce health risk factors. The natural flow of health risk reductions can be measured using a variety of methods, including the calculation of health risk factor reductions over time. The natural flow of health risk reductions is an important consideration in the design and evaluation of workplace wellness programs and the adoption of healthy behaviors and lifestyle changes.
Overall Health Risk Reduction with 2 Year TPP Participation

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

N = 7,804

<table>
<thead>
<tr>
<th>Level</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4666</td>
<td>2291</td>
<td>847</td>
</tr>
<tr>
<td></td>
<td>60%</td>
<td>29%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>5531</td>
<td>1775</td>
<td>498</td>
</tr>
<tr>
<td></td>
<td>71%</td>
<td>23%</td>
<td>6%</td>
</tr>
</tbody>
</table>

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: 3/2013
### Health Risk Reductions with 2 Year TPP Participation (Total N = 7,804)

<table>
<thead>
<tr>
<th>Individual Risks</th>
<th># People and % of overall population (7804) with High Risk in Baseline Year</th>
<th># People and % of the Baseline High Risk Group remaining High Risk after Year 2</th>
<th># People and % of the Baseline High Risk Group Reducing Risk out of High Risk after Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Pressure</td>
<td>923 (12%) (M=142/90)</td>
<td>179 (19%) (M=143/90)</td>
<td>744 (81%) (M=123/77)</td>
</tr>
<tr>
<td>HDL</td>
<td>328 (4%) (M=31)</td>
<td>134 (41%) (M=30)</td>
<td>194 (59%) (M=41)</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>836 (11%) (M=263)</td>
<td>353 (42%) (M=265)</td>
<td>483 (58%) (M=208)</td>
</tr>
<tr>
<td>Fasting Blood Glucose</td>
<td>1616 (21%) (M=116)</td>
<td>926 (57%) (M=123)</td>
<td>690 (43%) (M=92)</td>
</tr>
<tr>
<td>Body Mass Index (BMI)</td>
<td>3338 (43%) (M=33)</td>
<td>2937 (82%) (M=34)</td>
<td>401 (12%) (M=26)</td>
</tr>
</tbody>
</table>
Diabetes Care Management:
Inpatient Days per 1000 Diabetic Members per Year

N = 299

- Pre-Program: 1361
- Year 1: 458
- Year 2: 301
- Year 3: 261
Diabetes Care Management: Total Costs Per Diabetic Per Month across 3 Years in Program

N = 299

- Pre-Program: $1,262.15
- Year 1: $849.17
- Year 2: $691.85
- Year 3: $667.20
USPM Diabetes Care Management:

*Total Annual Costs for 299 Diabetics across 3 Years in Program

**N = 299**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Program</td>
<td>$4,528,594.20</td>
</tr>
<tr>
<td>Year 1</td>
<td>$3,046,821.96</td>
</tr>
<tr>
<td>Year 2</td>
<td>$2,482,357.80</td>
</tr>
<tr>
<td>Year 3</td>
<td>$2,393,913.60</td>
</tr>
</tbody>
</table>

*Total Costs Include the Cost of the USPM Diabetes Care Management Program

3 Year Cumulative Cost Savings: $5,662,689
Reduced Risk \(\rightarrow\) Reduced Cost

Average Saving (per Risk Reduced per person per year)

Reduced Risk → Improved Productivity

$950 Risk/Year

% of Productivity Change

6%
4%
2%
0%
-2%

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

# of Health Risk Changes

2 or more
0
-1
-2 or more

Wellness Works and Prevention Pays

**Average ROI**

$3.27

**Med/Rx Savings**

$2.73

**Absenteeism Savings**

$6.00 saved for every $1.00 invested

In Comprehensive Wellness

---

**Workplace Wellness Programs Can Generate Savings**

By Katherine Baicker, David Cutler, and Zhiu Song

**ABSTRACT** Amid soaring health spending, there is growing interest in workplace disease prevention and wellness programs to improve health and lower costs. A critical meta-analysis of the literature on costs and savings associated with such programs, we found that medical costs fall by about $3.27 for every dollar spent on wellness programs and that absenteeism costs fall by about $2.73 for every dollar spent. Although further exploration of the mechanisms and broader applicability of the findings is needed, this return on investment suggests that the wider adoption of such programs could provide benefits for productivity as well as health outcomes.

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Transformation beyond “Sick” Care to “Health” Care

Current Way

Focus
- “Sick Care” System
- Quantity/Cost of Service
- Illness, Injury and Absence
- Health “Benefit” as a Cost

Approach
- Permission to Drs & Pts
- Coverage focused on Sickness
- Fragmented/Uncoordinated
- Prevention a Cost to Justify

Results
- Benefits for Poor Health
- EEs “Use it or Lose it”
- Patients Passive Recipients
- “Pay for Quantity/Volume”

New Way

Focus
- True “Health” System
- Quality/Value of Service
- Well-being and Engagement
- Value and Benefits of Health

Approach
- Empowerment of Drs & Pts
- Aligned Incentives for Health
- Integration / Coordination
- Prevention as an Investment

Results
- Rewards for Better Health
- EEs “Use Wisely & Save”
- Consumers Active Participants
- “Buy Quality/Value”