“Understanding Prevention from an Employer Perspective"

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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
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

When the Age Wave Hits the Shore: Implications for Caring for Aging Baby Boomers
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
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
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.
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

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

MOBILE DEVICES HAVE OVERTAKEN WORLDWIDE POPULATION.*

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

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

Mobile Health App
Converging Trends Driving Employer Health Strategies

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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
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

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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

*Iceberg of Full Costs from Poor Health*

Health and Productivity (Absenteeism/Presenteeism) are inextricably linked.
Top 10 Health Conditions by Full Costs
(Med + RX + Absenteeism + Presenteeism) Costs/1000 FTEs

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

Converging Trends Driving Employer Health Strategies

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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 Solution: Evidence Based Prevention/Population Health Management
## Total Medical and Pharmacy Claims Costs for an Employer

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Eligible</td>
<td>60,668</td>
</tr>
<tr>
<td>Medical Paid</td>
<td>$ 94,318,172.00</td>
</tr>
<tr>
<td>Rx Paid</td>
<td>$ 30,836,368.78</td>
</tr>
<tr>
<td>Total Paid</td>
<td>$125,154,540.78</td>
</tr>
</tbody>
</table>
## Certain Medical Condition Prevalence in Employer Population
**Time period of 6/1/12 - 5/31/13**

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

**Total Cost for 7 Conditions** | $61,605,493.20
<table>
<thead>
<tr>
<th>Condition</th>
<th>Care Guide</th>
<th>Care Total</th>
<th>Condition Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asthma</strong></td>
<td>Patients with asthma related ER visit</td>
<td>151</td>
<td>4560</td>
</tr>
<tr>
<td><strong>Asthma</strong></td>
<td>Patients with asthma related hospitalization</td>
<td>139</td>
<td>4560</td>
</tr>
<tr>
<td><strong>Asthma</strong></td>
<td>Patients without inhaled corticosteroids or leukotriene inhibitors</td>
<td>2765</td>
<td>4560</td>
</tr>
<tr>
<td><strong>Asthma</strong></td>
<td>Patients without office visit</td>
<td>543</td>
<td>4560</td>
</tr>
<tr>
<td><strong>Congestive Heart Failure</strong></td>
<td>Patients with CHF or pulmonary edema related ER visit</td>
<td>96</td>
<td>722</td>
</tr>
<tr>
<td><strong>Congestive Heart Failure</strong></td>
<td>Patients with CHF or pulmonary edema related hospitalization</td>
<td>252</td>
<td>722</td>
</tr>
<tr>
<td><strong>Congestive Heart Failure</strong></td>
<td>Patients without ACE inhibitors or ARBs (HEDIS)</td>
<td>329</td>
<td>722</td>
</tr>
<tr>
<td><strong>Congestive Heart Failure</strong></td>
<td>Patients without beta-blocker drugs (HEDIS)</td>
<td>271</td>
<td>722</td>
</tr>
<tr>
<td><strong>Congestive Heart Failure</strong></td>
<td>Patients without LDL-C or lipid profile test in the last 12 months</td>
<td>611</td>
<td>722</td>
</tr>
<tr>
<td><strong>Congestive Heart Failure</strong></td>
<td>Patients without office visit in the last 12 months</td>
<td>311</td>
<td>722</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td>Patients taking SSRI and bupropion</td>
<td>235</td>
<td>3842</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td>Patients with depression related ER visit</td>
<td>121</td>
<td>3842</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td>Patients with depression related hospitalization</td>
<td>251</td>
<td>3842</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td>Patients without office visit in the last 12 months</td>
<td>2156</td>
<td>3842</td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td>Patients with antiplatelet agent (HEDIS)</td>
<td>329</td>
<td>1638</td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td>Patients without HbA1c test in the last 12 months</td>
<td><strong>525</strong></td>
<td><strong>1638</strong></td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td>Patients without lipid profile test in the last 12 months</td>
<td>647</td>
<td>1638</td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td>Patients without nephropathy screening in the last 12 months</td>
<td>1033</td>
<td>1638</td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td>Patients without retinal eye exam in the last 12 months</td>
<td>103</td>
<td>1638</td>
</tr>
</tbody>
</table>
USPM Diabetes Care Management Client Case Study: Inpatient Days per 1000 Members per Year across 3 Years in Program

N = 299

Pre-Program: 1361
Year 1: 458
Year 2: 301
Year 3: 261
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

3 Year Cumulative Cost Savings $5,662,689

Pre-Program: $4,528,594.20
Year 1: $3,046,821.96
Year 2: $2,482,357.80
Year 3: $2,393,913.60
The Association of Technology in a Workplace Wellness Program With Health Risk Factor Reduction

Ron Loeppey, MD, MPH, Dee Edington, PhD, Joel Beaudet, 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 7048 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, 44% 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 < .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 Risks 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 diseases 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.

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 $1.05 of every health care dollar on prevention to help promote a healthier, safer, more productive workforce. A large percentage of 117 million employees in the United States receive health benefits at work; therefore, employers have a unique opportunity to play a stronger role because lifestyle risk factors and medical conditions directly influence productivity. Workplace health and wellness initiatives now reach millions of employees, 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 is an area 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.

The Preventive Medicine Institute, Inc (Broomwood, TX), 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 behavior change. 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 plans 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 in the HRA. The health risks and cutoff points used in the HRA have been described previously. The most commonly used risk stratification tools are the low-risk category (0 to two risk factors), medium-risk category (three to four risk factors), and high-risk category (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. The transition of individuals or segments of individuals moving from one risk category to another when individuals are not engaged in wellness programs has been described by De Edington in the natural flow of health risks. The transitions are measured using Markov chain analysis, a mathematical technique used to examine longitudinal data from the same individuals, which is described in our previous work. The risk transitions for the population studied in this article were also analyzed using this same type of Markov chain analysis. It becomes obvious from the diagram used to display the risk transitions that slowing upward migration into
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

N = 7,804

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

<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%) <em>(M=142/90)</em></td>
<td>179 (19%) <em>(M=143/90)</em></td>
<td>744 (81%) <em>(M=123/77)</em></td>
</tr>
<tr>
<td>HDL</td>
<td>328 (4%) <em>(M=31)</em></td>
<td>134 (41%) <em>(M=30)</em></td>
<td>194 (59%) <em>(M=41)</em></td>
</tr>
<tr>
<td>Cholesterol</td>
<td>836 (11%) <em>(M=263)</em></td>
<td>353 (42%) <em>(M=265)</em></td>
<td>483 (58%) <em>(M=208)</em></td>
</tr>
<tr>
<td>Fasting Blood Glucose</td>
<td>1616 (21%) <em>(M=116)</em></td>
<td>926 (57%) <em>(M=123)</em></td>
<td>690 (43%) <em>(M=92)</em></td>
</tr>
<tr>
<td>Body Mass Index (BMI)</td>
<td>3338 (43%) <em>(M=33)</em></td>
<td>2937 (82%) <em>(M=34)</em></td>
<td>401 (12%) <em>(M=26)</em></td>
</tr>
</tbody>
</table>

“As Health Risks Go, So Go Health Costs”

Dr. Dee Edington – Zero Trends
Reduced Risk $\Rightarrow$ Reduced Cost

Average Saving
(per Risk Reduced per person per year)

Reduced Risk $\rightarrow$ Improved Productivity

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

- $950 Risk/Year
- $40 Average Productivity Savings (per Risk Reduced per person per year)

% of Productivity Change

# of Health Risk Changes

Example of qualifications for Physicians to receive incentive:

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

- **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
The Linkage: Healthy Companies drive Healthy Bottom Lines

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

Good Health is Good Business
from the Exam Room To the Board Room

The Bottom Line