Return On Investment: Building your Case for Wellness

March 19, 2009

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Health Plan Informatics
Health Plan Informatics

**Reporting**
- Account reporting
  - Medical facts
  - Drug facts
  - Risk management
  - Integrated account report
- Quality Management
  - HEDIS
  - CAHPS
- Govt., Regulatory
  - PHC4
  - PA Dept of Insurance
- Care Management
  - Blues On Call activity
  - Highmark@Hand
  - Condition Management Savings
- Reports@Hand
  - Self-service report generation and scheduling
- Ad hoc reporting

**Analysis**
- Foundational grouping and stratification of member populations
- Predictive modeling
  - Risk
  - Trends
- Research studies with CDC, County Health Department, RAND, Solucia

**Strategic Initiatives**
- Blue Health Intelligence (BHI)
- Health Excellence Partners
- Personal Health Records
- Specialty physician profiling
- Cost and Quality Transparency
- Fraud

**Data Services**
- Data feeds (IPDR)
- Data extracts (CDE, BHI)
- Member Reporting Repository
- Programs/query migration
- Pharmacy carve outs

**Business Ventures**
- IntelliMedix
Advanced Analytics

- Pattern recognition and deviation detection
- Segmentation and clustering
- Time series and forecasting methods
- Advanced geo-statistical methods
- DxCG, RxGroup Models
- Member movement Analyses
- Statistical modeling (e.g., linear, logistic regression, ANOVA, Cox models)
- Cohort identification and analysis
- Rigorous scientific research studies
**Where Does Your Health Insurance Dollar Go?**

<table>
<thead>
<tr>
<th>Insurer Profits</th>
<th>3¢</th>
<th>Consumer Services*, Provider Support and Marketing</th>
<th>4¢</th>
<th>Government Payments, Compliance, Claims Processing and Other Administrative Costs</th>
<th>6¢</th>
<th>Other Medical Services</th>
<th>5¢</th>
<th>Drugs</th>
<th>14¢</th>
<th>Outpatient Costs</th>
<th>15¢</th>
<th>Inpatient Costs</th>
<th>20¢</th>
<th>Physician Services</th>
<th>33¢</th>
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<tbody>
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</tbody>
</table>

*Includes prevention, disease management, care coordination, investments in health information technology and health support.

"Whoa! Watch where that thing lands—we'll probably need it."
Rising Healthcare Costs

• Cardiovascular Disease
  – Over 80 million cases and over 870,000 people who die of heart disease and stroke each year
  – Economic burden: $448 billion a year including direct and indirect costs.

*National Center for Chronic Disease Prevention and Control [2008]*
Rising Costs

• Chronic diseases increase labor costs through many means, including health care costs, but also through productivity losses from missed work, decreased on-the-job effectiveness, and turnover when an employee becomes too ill to return to work.

• Since 2001, the cost to employers of providing health insurance has increased by 78%. Data suggest that, for chronic diseases, the cost of productivity losses exceeds the cost of health care by as much as 4-fold.

Kaiser Family Foundation 2007
Rising Costs

*Diabetes*

- 23.6 million cases and over 200,000 deaths from complications from the disease each year.
- Economic burden: $174 billion a year including $116 billion in medical costs and $58 billion for lost work days and productivity.

*National Center for Chronic Disease Prevention and Control [2008]*
Rising Costs

• Cancer

  – 553,000 deaths and 1.3 million new cases each year.
  – Economic burden: $217 billion a year including $89 billion in medical costs and $130 billion for lost work days and productivity.

National Center for Chronic Disease Prevention and Control [2008]
Rising Costs

• **Smoking and Substance Abuse**
  
  – Substance abuse costs the US more than $346 billion per year
  – Illicit drug use alone costs $116 billion
  
  – Alcohol-related problems cost the U.S. approximately $185 billion each year.
  
  – Smoking: Approximately 438,000 deaths each year. Economic burden: Over $96 billion in medical costs and $97 billion in indirect costs.

*National Center for Chronic Disease Prevention and Control [2008]*
National Institute of Alcohol Abuse and Alcoholism
The George Washington University Medical Center
Rising Costs

• The total cost of obesity in the U.S. is estimated at $92.6 billion annually

  – Medical expenditures for obese workers, depending on severity of obesity and sex, are between 29%–117% greater than expenditures for workers with normal weight.
  – Obesity is believed to be associated with more chronic disorders and worse physical health-related quality of life than is smoking or problem drinking
  – Estimates of the number of years of life lost as a result of obesity range as high as 20 years of life lost for certain age and racial/ethnic groups.

CDC (2004, 2009)
Highmark’s Investment
Reinvigorating Highmark’s Employee Wellness Program

- In 2002, Highmark’s internal wellness initiative was reinvigorated.
  - Incentive of $50
  - Strong endorsement of senior leadership
  - Participants rose from 547 to 2,888
  - Significant impact on HRA-based risk as measured by annual aggregate reports
Preventive Health Services (PHS) Offerings

• **Worksite Programs**
  - Personal Nutrition Coaching\textsuperscript{SM}
  - Eat Well for Life I\textsuperscript{SM} & II\textsuperscript{SM}
  - Discover Relaxation Within I\textsuperscript{SM} & II\textsuperscript{SM}
  - HOPE\textsuperscript{SM}
  - Diabetes Awareness & Prevention\textsuperscript{SM}
  - Clear the Air\textsuperscript{SM}
  - Weight Watchers at Work
  - Physical Activity
Preventive Health Services Campaigns

- 10,000 Steps Challenge℠
- Bands on the Run℠
- Drop 10 in 10℠
- Color Your Plate℠
- Maintain Don’t Gain℠
Highmark Employee Participation

Employee Wellness Participation by Year

- 2002: 40%
- 2003: 50%
- 2004: 62%
- 2005: 80%
- 2006: 90%
The Impact of Highmark Employee Wellness Programs on 4-year Healthcare Costs

Journal of Occupational and Environmental Medicine, Feb 2008
Objective of the study

Determine the Return on Investment (ROI) of Highmark’s Wellness programs using a rigorous scientific methodology
Methodology

• 1,892 employees included (18%)
• Risk-matched participants using age, gender, 2001 claims, and Charlson score to a similar cohort
• Growth curve analysis
• Examine claims trends for 2001-2005
## Costs of Wellness

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>GD Total</th>
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</thead>
<tbody>
<tr>
<td></td>
<td># Used</td>
<td>Total</td>
<td># Used</td>
<td>Total</td>
<td># Used</td>
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<tr>
<td>HRA &amp; Incentive</td>
<td>1892</td>
<td>$243,731</td>
<td>1303</td>
<td>$143,111</td>
<td>1308</td>
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<tr>
<td>Online</td>
<td>201</td>
<td>$1,142</td>
<td>247</td>
<td>$1,372</td>
<td>248</td>
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<tr>
<td>Group</td>
<td>34</td>
<td>$1,544</td>
<td>56</td>
<td>$3,077</td>
<td>56</td>
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<tr>
<td>Nutrition Coaching</td>
<td>2</td>
<td>$66</td>
<td>23</td>
<td>$740</td>
<td>51</td>
</tr>
<tr>
<td>10,000 Steps</td>
<td>244</td>
<td>$2,441</td>
<td>495</td>
<td>$3,851</td>
<td>223</td>
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<tr>
<td>Fitness Center</td>
<td>407</td>
<td>$25,603</td>
<td>495</td>
<td>$29,939</td>
<td>879</td>
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<tr>
<td>Highmark Challenge</td>
<td>112</td>
<td>$348</td>
<td>910</td>
<td>$2,766</td>
<td></td>
</tr>
<tr>
<td>Maintain Don't Gain Newsletter</td>
<td>85</td>
<td>$182</td>
<td>93</td>
<td>$192</td>
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<tr>
<td>Wellness Program Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cost per participant</td>
<td></td>
<td></td>
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<tr>
<td>Estimated Annual Savings from Model $176.47/person</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Savings (Estimated Savings - Wellness Program Costs)</td>
<td>$87,398</td>
<td>$157,538</td>
<td>$129,304</td>
<td>$527,121</td>
<td></td>
</tr>
</tbody>
</table>

Wellness Program Costs, Highmark Inc., inflation-adjusted to 2005 dollars

Naydeck, et. al, JOEM 2008
RESULTS
Program participation

% participating

Fitness Center
Highmark Challenge
Health Media
10,000 Step Campaign
Nutrition Counseling
Group Program

2002
2003
2004
2005
Annual Growth in Total Payments
Growth in Healthcare Costs Comparison

Inpatient: -83.34%
Outpatient: -0.07%
Pharmacy: -0.40%
Professional: -2.98%

N=3,784
## DxCG Risk Category Changes 2001-2005

<table>
<thead>
<tr>
<th>Program</th>
<th>Risk Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRA &amp; Fitness Center</td>
<td>14.4%</td>
</tr>
<tr>
<td>HRA &amp; Media, Group, or Individual Programs</td>
<td>12.6%</td>
</tr>
<tr>
<td>HRA Only</td>
<td>11.2%</td>
</tr>
<tr>
<td>Controls</td>
<td>11.1%</td>
</tr>
</tbody>
</table>
DxCG Risk for Wellness Groups

DxCG predictive risk score vs. 2001-2005

- HRA Only
- HRA & Other
- HRA & FC
- Controls
Preventive Screening Rates
ROI Calculation

• Savings 4 Years after Baseline (2001) $1,335,524
• Total Costs 4 Years (2002-2005) $808,403
• ROI = 1.65:1
Significant Findings

- Overall savings of $176 PPPY
- Inpatient savings greatest, $182 PPPY
- Preventive screening rates increased for participants
- Incremental risk decreases
- Participants in wellness were not just healthy employees
- ROI of $1.65
Conclusions

• Positive findings for all participation groups
• Savings sustained over multiple years
• ROI does not include increase in productivity and decreased absences
• Positive and conservative ROI – wellness works!
• HRA is a good start