

Workforce Health and Productivity:

HOW EMPLOYERS MEASURE, BENCHMARK AND USE
PRODUCTIVITY OUTCOMES

Workforce Health and Productivity:

HOW EMPLOYERS MEASURE, BENCHMARK AND USE
PRODUCTIVITY OUTCOMES

Contents

Introduction	1
Summary of Findings	2
Case Studies	
1 Aetna	9
2 American Express.....	15
3 Baystate Health	21
4 Caterpillar	27
5 The Dow Chemical Company.....	32
6 Eastman Chemical Company.....	38
7 HC21.....	43
8 Lincoln Industries.....	49
9 Pinnacol Assurance.....	54
Self-Report Measurement Tools	
HPQ-Select and HPQ.....	60
Well-Being Assessment (WBA).....	63
Work Limitations Questionnaire (WLQ).....	66
Work Productivity and Activity Impairment Questionnaire (WPAI) ...	68

Jointly developed by:

Riedel & Associates Consultants, Inc.
11065 McDonald Avenue
Conifer, CO 80433
303 697 0719
jriedel@riedelandassociates.com
riedelandassociates.com

and

Integrated Benefits Institute
595 Market Street, Suite 810
San Francisco, CA 94105
415 222 7280
info@ibiweb.org
ibiweb.org



We thank the following sponsors for their support:

Healthways provides science-based well-being improvement solutions used by health plans, employers, individuals and policy makers to enhance both human and business performance. Healthways is a member of IBI's Board of Directors.

Novartis is a worldwide, research-based healthcare company and a member of IBI's Board of Directors.

Wellness & Prevention, Inc., a Johnson & Johnson company, offers an integrated and comprehensive total health solution to drive improved health and productivity while reducing healthcare costs. Wellness & Prevention is a member of IBI's Board of Directors.

IBI BOARD OF DIRECTORS

*Aetna
Allergan
Anthem Life
Avery Dennison
Bristol-Myers Squibb
Caterpillar
CIGNA
Eastman Chemical Company
Employers Health Purchasing Corp. of Ohio
Genentech
GlaxoSmithKline
Health Care Service Corporation
Healthways
Kaiser Permanente
Lafarge
Liberty Mutual Insurance Group
Medco Health Solutions
Novartis
Pfizer
Pinnacol Assurance
PPG Industries
Prudential Financial
Reliance Standard/
Matrix Absence Management
Safeway
The Hartford
The Home Depot
Towers Watson
Union Pacific
USAA
Vanderbilt University and Medical Center
Walmart
Wellness & Prevention
Yum! Brands*

The Importance of Measuring the Effects of Health on Worker Productivity

Employers are in transition, moving from managing the costs of health-related claims to managing the health of populations. In this transition, they face two new hurdles to understanding the broadest outcomes of improved population health: how to better quantify the productivity consequences of workforce health and how to identify health conditions not under care but having negative impacts on business results.

Thus, understanding the connection between worker health and productivity (H&P) has moved from a fruitful area of consideration to a business imperative in less than a decade. A growing body of research¹ demonstrates that poor health is associated with significant productivity loss from absence and reduced on-the-job performance (“presenteeism”). Many employers are implementing health and productivity management (HPM) strategies based only on the intuitive belief that improving workforce health will result in productivity and bottom-line business improvement.

These employers tend to be innovators or early adopters eager for new solutions and willing to try unproven but compelling strategies. They have been instrumental in providing real-world experience that has helped accelerate growth in the field of health, absence, disability and productivity management. Yet, while the authors and the sponsors of this resource are encouraged by the rate of adoption,

they note that a large percentage of employers have yet to embrace these concepts. This resource was developed with those employers in mind.

This inertia is, to a considerable extent, based on employers’ poor understanding of the impact of ill health on productivity. Many employers offer paid-time-off policies or have poor data linkage so that measuring health-related absence is difficult. Measures of on-the-job performance tied to health are not typically collected by employers. Therefore, measuring health-related productivity loss requires the use of self-report tools.

Employers may be wary, however, of relying on their employees to “quantify” their own level of lost time and performance. Their concerns center around the validity of self-reported measures and the perception that employees will be biased in their responses. This resource was also developed with these issues in mind.

Case Study Rationale

In this resource, we use a case study approach to provide real-world examples that represent a range of employers by size and industry. We address how employers measure the connection between health and productivity and how they use the information to inform their health management strategies. We include employers new to the field as well as some of the early innovators. Our intent is to provide diversity in employers and the tools they use so that any employer considering an H&P measurement initiative can find a wealth of ideas translatable to its own situation.

¹ Loeppke R, Taitel M, Haufle V, Parry T, Kessler R, Jinnett K. Health and productivity as a business strategy: a multiemployer study. *Journal of Occupational and Environmental Medicine*. 2009;51(4): 411-28; and Johns G. Presenteeism in the workplace: a review and research agenda. *Journal of Organizational Behavior*. 2010;31: 519-42.

Summary of Findings

Summary of Findings

The Employers

[Aetna](#)
[American Express](#)
[Baystate Health](#)
[Caterpillar](#)
[The Dow Chemical Company](#)
[Eastman Chemical Company](#)
[HC21](#)
[Lincoln Industries](#)
[Pinnacol Assurance](#)

Measurement Time Frames

Health and productivity measurement is still a young science. Although three “veterans” have been conducting ongoing measurement for the past six to eight years, three of the case studies implemented H&P measurement for the first time in 2010.

Annually since 2003:	Aetna
Annually since 2005:	Eastman Chemical Company
Annually 2005-2007; every two years since 2008:	The Dow Chemical Company
Annually since 2008:	Baystate Health
Annually since 2009:	Pinnacol Assurance
Inaugurated in 2009:	HC21
Inaugurated in 2010:	American Express Caterpillar Lincoln Industries

Measurement Tools Used

A growing number of worker productivity measurement tools have become available in recent years. A 2007 review by Mattke et al, highlighted 17 measurement tools.² These tools vary widely in terms of survey length, recall time frame and types of presenteeism measured. In our case studies, four different tools were used:

- **Health and Work Performance Questionnaire** (HPQ-Select and HPQ) [2 EMPLOYERS]
- **Well-Being Assessment (WBA)** [2 EMPLOYERS]
- **Work Limitations Questionnaire (WLQ)** [3 EMPLOYERS]
- **Work Productivity and Activity Impairment Questionnaire (WPAI)** [2 EMPLOYERS]

Three of these tools (the HPQ, WLQ and WPAI) have been available for more than a decade. A recent entry to the field, the WBA has been gaining traction since its introduction in 2008. A detailed description of each tool can be found in the section titled *Self-Report Measurement Tools*.

The case studies presented here make clear that the method of deployment of H&P measurement has moved away from stand-alone initiatives, often conducted for research purposes. In all of the case studies, the H&P questions from the various measurement tools have been integrated into an existing measurement initiative, typically a health risk appraisal (HRA). Because HRAs address personal health issues that can influence on-the-job performance and absence, the integration of the two measures makes perfect sense. Plus, a health risk appraisal is usually re-administered annually or every other year to track change over time. With the inclusion of H&P questions, this tracking capability provides the time sequencing necessary to determine the effectiveness of health initiatives on productivity.

² Mattke S, Balakrishnan A, Bergamo G et al. A review of methods to measure health-related productivity loss. *American Journal of Managed Care.* 2007;13(4):211-17.

Important Organizational Factors

We began by querying each case study participant about four organizational factors: senior management buy-in, corporate health culture, integration of benefits management and integration of health metrics. Our intent was to provide context for how these factors influenced a company’s approach to H&P measurement. We assumed that a high level of senior management buy-in, a strong culture of health, an integrated approach to benefits management and the capability to integrate health metrics would be associated with companies that conduct measurement.

This assumption proved accurate. All but one of the companies scored moderate to high in each of these areas. We have no means for determining how these scores compare with employers in general. It’s possible that this pattern is not unusual. It does stand to reason, however, that companies conducting measurement initiatives would score at the higher end.

Senior Management Buy-In

Senior management buy-in was considered a key ingredient for success. Eight of the nine companies enjoy moderate to strong senior management buy-in.

How would you rate senior management buy-in to your health and wellness initiatives?

Rating	No. of companies
Low (limited to human resources [HR] and benefits managers)	1
Moderate (some involvement beyond HR)	4
High (senior leadership takes responsibility for ensuring a healthy workforce and demonstrates that commitment regularly)	4

Corporate Culture of Health

Interest in building a positive culture of health was thematic for all case studies. In fact, the connection between senior management buy-in and a positive culture of health seems to be interwoven. Several companies currently conduct culture surveys, while others are seriously considering doing so. Eight of the nine employers have a moderate to strong culture of health.

How would you describe your corporate health culture?³

Rating	No. of companies
Weak (We focus on reducing short-term healthcare costs)	1
Moderate	3
Strong (We focus on employee health asset management as a key to business success)	5

Integration of Benefits Management

An integrated approach to benefits management is common among our case studies. No one is doing H&P self-reporting without considerable input and leadership from other business units. Business units involved usually include corporate medical, benefits, occupational health and safety, marketing, communications, finance and human resources. None of the employers operates in a siloed benefits environment.

What is your structure of corporate benefits management?

Rating	No. of companies
Cross-functional/coordinated	4
Integrated	5

Integration of Health Metrics

Among these case studies, H&P measurement is enhanced as a result of integration within a broader set of health-related measures. None of the employers has siloed health metrics.

How well integrated are your health metrics with other health measures such as EAP (employee assistance program), workers’ compensation, disability, FMLA (Family and Medical Leave Act) and group health?

Rating	No. of companies
Moderately integrated	8
Fully integrated	1

³ For the purpose of the pre-interview query, we defined culture along a five-point continuum, from “Weak: We focus on reducing short-term healthcare costs” to “Strong: We focus on employee health asset management as key to success.”

Drivers of Self-Reported Measurement

The reasons for conducting H&P measurement are as varied as the case studies themselves.

Aetna pioneered health and productivity management in 2003, sending an invitation to attend a forum on H&P to large employer clients. Many attended. A key finding from the forum: Companies don't have good absence data and have almost no health-related productivity data. Aetna saw this as an opportunity to measure H&P among its employees and, ultimately, to bring a resource to its clients.

American Express conducts much of its business within a call-center environment, where issues of service quality, on-the-job performance and customer satisfaction are of paramount importance. The values and competence of American Express are exhibited during each and every phone interaction. Paying attention to the health of employees is expected to foster a highly productive workforce.

Baystate Health addressed a most compelling issue: a looming workforce shortage. A lead objective of its Health, Wellness and Work/Life team was to support the system's workplace-of-choice goal. That included enhancing employee wellness and work/life balance, resulting in an engaged, high-performing workforce.

Caterpillar has addressed the rising cost of healthcare for the past eight years. Although the company has been successful, keeping its cost trend under 1%, its Corporate Medical department believed that it was time to broaden the cost issue. The medical team wanted to redirect focus from a traditional benefits approach to help the company understand the total cost of poor health.

The Dow Chemical Company's health and productivity efforts have evolved over a decade based on the understanding that "sustainable development is underpinned by the performance, creativity, productivity and retention of quality employees." Seminal research conducted in 2004⁴ provided strong evidence that productivity loss due to poor health was more expensive than medical costs.

Eastman Chemical Company's H&P program is driven partly by the company's extremely low turnover rate. Because less than 2% of employees leave the company from year to year, the company has a strong interest in maintaining the health and productivity of its workers. As a result, Eastman Integrated Health was formed to develop a total-population health approach aimed at improving the health of the company's aging workforce. Its top goal: Create a healthier and more productive workforce.

HC21 is a business and health coalition charged with helping its members better manage their healthcare costs while improving quality. Interest in the connection between health and productivity came through the development of a new initiative called the Chronic Care Network (CCN). The CCN is dedicated to the management of major chronic diseases and high-risk lifestyle factors that have a high impact on medical costs and productivity. H&P measurement was an essential part of the evaluation process.

Lincoln Industries launched its wellness program in 1977. With strong senior-level support, the program grew to become a leader in the industry. Learning from decades of experience, the company moved beyond the traditional health risk and illness approach to a more holistic view of employee well-being, with an emphasis on productivity metrics.

Pinnacol Assurance sought to make a serious difference for its workers' compensation customers, typically small to mid-sized companies with few resources, by offering health risk management programs. Its value proposition was compelling: Provide a unique service in a highly competitive business, prove that it makes a difference in employees' lives and show improvement in its clients' productivity. To best do that, Pinnacol tried it on its own workforce first.

⁴ Collins JJ, Baase CM, Sharda CE et al. The Assessment of chronic health conditions on work performance, absence, and total economic impact for employers. *Journal of Occupational and Environmental Medicine*. 2005;47(6):547-57.

The Case for Self-Reporting of Productivity Data

Use of self-reported measures of productivity wasn't a showstopper for any of the case study companies. For most employers, demonstrating the connection between worker health and productivity requires self-reporting. **Aetna** made the case back in 2003: "Self-reported measurement is the gold standard for generating productivity data. Few companies have objective data related to on-the-job performance (presenteeism), and absence data is hard to capture given the move toward paid-time-off policies."

- Companies have been using and relying on a variety of self-reported measures for years, including health risk appraisals, employee satisfaction surveys, employee engagement surveys and, more recently, corporate culture audits.
- The science behind self-reported measurement is well grounded. The tools used by these case studies have been extensively research-validated.
- The science of self-reported H&P measurement was developed by researchers at esteemed organizations, including Harvard Medical School, Tufts Medical Center, Gallup and Healthways.

When the self-reporting approach was called into question, here's what worked for two of the case study participants:

At **Baystate Health**, self-reporting wasn't a slam-dunk. The research evidence on the cost of lost productivity seemed unbelievably high. The response: "If the cost estimates seem high, cut them in half; the amount is still significant. And, even if you doubt the veracity of self-reported measurement, keep in mind that employees are not likely to err to the side of overestimation of productivity loss. The socially desirable response bias is generally toward a higher level of productivity."

At **Caterpillar**, the accuracy of self-reported health and productivity was in question. Yet the company's annual employee engagement survey (also using self-reported measures) had been conducted for years, and the results were highly valued. Its response: Productivity outcomes were correlated to the engagement data. The strong correlations supported the accuracy and the usefulness of the H&P measures.

Key Factors for Tool Selection

Each case study participant conducted a due diligence process. Some were more comprehensive than others. **Dow's** due diligence was particularly rigorous, using a Six Sigma process that started with a list of essential criteria:

- Strong validation
- Ease of administration
- Ease of adding to other measurement initiatives
- Ability to link with other corporate data
- Short question set
- Robust reporting format
- Flexibility across populations
- Vendor support
- Reasonable cost

Five criteria were consistently mentioned by all of the companies:

- Strong validation
- Measures consistent with the H&P initiative
- Ease of administration
- Low response burden
- Capability to integrate with other health data

Implementing the H&P Initiative

High participation was a primary objective for all companies; participation rates among the case studies ranged from 38% to 100%. Four factors drive their implementation efforts:

- 1 **Tie H&P measures to an HRA.** Adding health and productivity measures to an ongoing HRA helps ensure participation and ties productivity outcomes to health issues for program planning.
- 2 **Guarantee confidentiality.** Employees must believe that their personal information is secure and will be used only as part of aggregate findings. The Health Insurance Portability and Accounting Act (HIPAA) and Genetic Information Nondiscrimination Act (GINA) must be effectively addressed.
- 3 **Provide incentives.** A variety of incentives are used by these case studies, including public recognition, additional time off, gift cards and discounts, and financial compensation. All but one of our case study participants have begun to tie participation to their health benefits. This takes the form of either funding a health reimbursement account or reducing the cost of health benefits premiums. Incentives range as high as \$500 annually for our case study employers.
- 4 **Communicate effectively and efficiently.** The more impressions that employees have regarding the H&P message, the more likely its positive impact—up to a point. Too much exposure over a short period of time can actually reduce interest. Market research indicates that five impressions are most efficient.

Using the H&P Findings

How employers used the findings from their measurement initiatives tends to organize around three purposes: [descriptive measurement](#), which determines the degree to which health status affects work performance; [comparative measurement](#), which assesses the differential effect of various health risks and chronic conditions on performance; and [evaluative measurement](#), which assesses change over time, particularly as part of program evaluation.

- 1 Descriptive measurement** focuses broadly on the degree to which the health status of the workforce compromises the productivity of the organization. All case study employers used descriptive measurement as a means for quantifying the full cost of poor health.

Some examples:

- *“The results of the study enabled us to increase our understanding and awareness of the full cost of poor health. We estimated the annual cost of health-related lost productivity to be \$59 million annually.”*
[EASTMAN CHEMICAL COMPANY]
- *“The magnitude of health-related lost-productivity costs is too large to ignore. Poor health cost us more than \$1.4 million in 2009, most of it from reduced employee performance, equaling 2.6% of total human capital costs.”* [PINNACOL ASSURANCE]
- *“We use the results to provide perspective on the broad range of factors that affect employee productivity.” The company also segments findings by business unit as a means for targeting priority areas for improvement.*
[CATERPILLAR]
- *“The magnitude of the productivity loss is enough to convince leadership that this is an area that must be addressed in order to meet corporate priorities and contribute to the long-term sustainability of the company.”* [THE DOW CHEMICAL COMPANY]
- *“In most foreign locations, medical costs are not the issue. Productivity improvements are linked to customer data to make the case that improving the performance of our workforce results in enhanced customer service.”*
[AMERICAN EXPRESS]

- 2 Comparative measurement** goes beyond simple quantification of magnitude to provide specificity as to which factors are driving impaired productivity. Health risks and chronic conditions are primary factors, but others are gaining acceptance, including employee engagement, well-being and corporate culture.

- *“The percentage of productivity loss by level of risk is a useful measure. Our wellness program can track the loss by overall risk level. This provides a template for keeping low-risk individuals healthy and improving the risk level of those at medium to high risk.”* [AETNA]
- *“The data showed that the productivity of our employees is significantly impacted by behavioral health issues such as depression and fatigue. We are implementing an improved care management system that will integrate behavioral health more effectively.”*
[EASTMAN CHEMICAL COMPANY]
- *“We used a tool that would help us understand key psychological issues like emotional health, life evaluation and work environment that are essential to helping individuals make wise health decisions and perform at a high level.”* [LINCOLN INDUSTRIES]
- *“We identified health and productivity issues at the business unit level in order to drive targeted improvement initiatives. We also correlated productivity outcomes with our employee engagement survey. This confirmed that healthy behaviors lined up consistently with higher levels of engagement.”* [CATERPILLAR]
- *“Our work-loss study findings are well received by our members. They value the comparison between participants and non-participants. This is valuable information that supports and informs our members’ financial outlays for care management.”* [HC21]
- *“HealthMedia, Inc. provides periodic reports of the Succeed HRA findings that describe the unique constellation of Baystate employees’ health risks and conditions.”* [BAYSTATE HEALTH]

3 Evaluative measurement is essential to demonstrate that as health status improves, so does productivity. This is done by using evaluative, time series or repeated measures that are sensitive to changes in key parameters such as health risks, chronic conditions and well-being.

- *The Dow Health Strategy Annual Report provides an overview of annual and cumulative achievements. Tracking change over time is particularly important. In 2009, case management helped save \$3 million in lost work days related to injuries. Adding improvements in presenteeism brought the total to more than \$9 million.* [THE DOW CHEMICAL COMPANY]
- *Because Lincoln recently tied a wellness component to its performance evaluations, the company wants to know how well it's working. Early results indicate that it's working well. "A 10-point increase in well-being score is associated with a 4% higher self-reported job performance."* [LINCOLN INDUSTRIES]
- *"An eye-opening finding was that it would take more than \$15 million in additional revenue to equal a 5% reduction in productivity loss."* [EASTMAN CHEMICAL COMPANY]
- *"We worked with our Analytics department to determine the direct medical costs of not exercising. Then we added the indirect costs. We were able to quantify a positive ROI on a new exercise program."* [AETNA]

Making an H&P Initiative Stick

Often, a new and promising business idea generates great interest, then fades—either because it wasn't effective or, maybe worse, was effective but had no staying power. Many of the case studies included here have been through that boom-and-bust cycle. Here are various strategies for making a health and productivity initiative stick:

- *"We believe that sustainability is dependent upon our ability to demonstrate outcomes that are relevant to our business leaders. A calculation of the return on investment is a highly valued outcome measure. We share these findings on a quarterly schedule with senior management."* [AMERICAN EXPRESS]
- *Make sure that health and productivity efforts are tied to the goals and the objectives of the company and specifically to its businesses and functions. Then, if someone wants to stop the effort, it will impact multiple functions and even have an impact on corporate objectives.* [THE DOW CHEMICAL COMPANY]
- *"We brought all expenditures and decision-making around HPM to the corporate level. All funds spent for HPM programming were budgeted along with group health, disability and vacation. Any changes are therefore decided corporate-wide."* [EASTMAN CHEMICAL COMPANY]
- *The best way to make an H&P initiative stick is to "think that way." In other words, make health a universally accepted component of "how we do business around here."* [LINCOLN INDUSTRIES]
- *The most influential factor that ensures H&P's staying power is that leadership moved the initiative from designation as a "project" to an operational unit of the company. That action confirms senior management buy-in and means that H&P is firmly rooted in the corporate business plan.* [PINNACOL ASSURANCE]
- *First, build it into the corporate strategy. Second, make sure senior management supports it. Third, don't assume that senior-level buy-in lasts forever.* [AETNA]
- *It's important to link employee health and productivity to the current business environment. Remind leadership regularly that the health, fitness and resiliency of the workforce are valuable assets, especially during times of change. Build awareness that health is a business imperative, not just the right thing to do.* [BAYSTATE HEALTH]

Lessons Learned

For organizations considering the value of H&P measurement or that are in the due-diligence process, below is a set of lessons learned that were consistently voiced—along with a few that were unique but worth noting.

Lessons in Common

■ Just get started.

“You’ve got to have a starting point. You must know where you currently stand to move an H&P initiative forward.” [AETNA]

■ Create a plan.

“Don’t do something just because others are doing it. Develop your overall health and productivity management strategy based on your company’s demographics, desired objectives and outcomes.”

[EASTMAN CHEMICAL COMPANY]

■ The data are critical.

“It’s not a new lesson but one that needs constant attention—you need to examine what you don’t understand. Ongoing measurement is necessary for success.” [LINCOLN INDUSTRIES]

■ Engage leadership.

“The size of the productivity opportunity gets senior management’s attention. Their support opens up potential resources, including budgets.”

[THE DOW CHEMICAL COMPANY]

■ Develop support systems.

“An HPM advisory board of people representing all parts of the company is really useful. It expands buy-in and promotes credibility.”

[PINNACOL ASSURANCE]

■ Communicate to the front lines.

“The concept of health and productivity must be put into terms that are tangible to the business units. The question to be answered is: How will a healthy worker get more product out the door?” [CATERPILLAR]

■ Engage employees.

“Be clear with employees why you’re doing this. What is the value proposition for them?” [BAYSTATE HEALTH]

Unique Lessons

Several lessons were unique to a particular case study. These may be germane to only a subset of readers, but we think they add to the dialogue:

■ *By building credibility internally with their own employees, the Wellness Works team influences how H&P is positioned with Aetna clients. This is the power of “we’ve done it here.” Their success is leveraged to provide effective programs to millions of Aetna clients.* [AETNA]

■ *“Getting employers interested isn’t that tough. Their main objection is not one of disbelief. Once you show employers that you can measure the connection between health and productivity, they get on board.”* [HC21]

■ *Pinnacol was fully insured, so information at the level of detail necessary for program and policy management wasn’t available. Using the health risk management program as a catalyst, the human resources staff convinced senior management to shift to self-insured status. Pinnacol now gets the data it needs through its third-party administrator.* [PINNACOL ASSURANCE]

■ *The focus on health and productivity has helped Dow maintain a strong international reputation as a leader regarding the business value of health. Working to make life better on a world stage is a point of pride for Dow workers.* [THE DOW CHEMICAL COMPANY]

■ *“Taking the Healthy Living Campaign globally added a wide range of new challenges. A Global Wellness Steering Committee was established to bring a consistent strategic direction and rigor to the process.”* [AMERICAN EXPRESS]

Case Studies

CASE 1: AETNA

Making Measurement Easy and Convenient through Integration with the Simple Steps to a Healthier Life[®] Wellness Program

Synopsis

The genesis for Aetna's health and productivity initiative dates back to a 2003 forum on measuring the relationship between worker health and productivity. The forum, sponsored by Aetna's Specialty Products division, attracted 30 large-employer customers. The interest generated that day prompted Aetna's internal Benefits department to conduct its own self-reported measurement. The department integrated select productivity measures into its *Simple Steps to a Healthier Life* health risk assessment, a proprietary resource offered to customers but also used by Aetna employees. The productivity data are hard-wired into an *Integrated Health Solutions* report, providing a vehicle for understanding how workforce productivity ties into Aetna's overall corporate health solution.

Company Overview

Aetna is one of the nation's leading health plans, providing health and financial security through a broad range of insurance and employee benefits products. The company offers a wide variety of programs and services to help control rising employee benefits costs while striving to improve the quality of healthcare. Aetna's customer-focused programs include case management, disease management and patient safety programs that can integrate with medical, dental, pharmacy, behavioral health and disability offerings. In 2007, Aetna was the first major national insurer to implement consumer-directed healthcare as a full replacement strategy. (For more information about the company, visit www.aetna.com.)

Headquartered in Hartford, Connecticut, Aetna employs 32,000 people. Its workforce is 76% female and 24% male, with an average age of 43. Almost all (97%) are employed full-time. The majority of employees (82%) receive

their health benefits through Aetna's own self-insured plan.

Measurement Background

Aetna was a pioneer of health and productivity management (HPM). It was back in 2003 when Mark Bertolini, then head of Specialty Products and now Aetna's Chairman, CEO and President, hosted a major forum for the company's large clients on how to measure the relationship between worker health and productivity. A number of Aetna's clients were taking an interest in this emerging field. Aetna put on a full-day training event, invoking the adage *If you build it, they will come*. More than 30 employers attended. The interest generated from that event was the seed that would grow into the significant health and productivity (H&P) resources offered by Aetna today.

Aetna provides a wide range of H&P services to its customers. While that's an important story, the focus of this case study is Aetna's commitment to H&P for its own

Measurement Overview

Tool Used:

Work Limitations Questionnaire (WLQ)
(see *Self-Report Measurement Tools* for description)

Offered to:

All U.S.-based employees

Response Rate:

Currently 63%

Incentives Offered:

Up to \$500 in incentives plus \$500 for eligible family members who track their progress, achieve preset disease management outcomes and complete three tasks in Aetna's Member Health Engagement Plan tool

Measurement Time Frame:

Continuously as part of the Simple Steps to a Healthier Life health risk assessment (HRA), beginning in 2003

Responsible Party:

Karen Ryan
Wellness Works Center Manager
Nancy Lusignan
Benefits Manager

employees. Although it might have been convenient for Aetna to focus its efforts externally to its customers (the market potential seemed high), it had the foresight to know that what's valuable to its customers is valuable to itself. The company embarked on an H&P venture that now celebrates eight years of longevity.

That venture is embedded in Aetna's mission to support the health of its workers. All U.S. employees are offered *Simple Steps to a Healthier Life*, a self-directed online program that employees can access from work or home. Participants start by completing an online health risk assessment (HRA), after which they receive an action plan and links to online healthy living programs that cover a range of health issues such as stress, fitness, nutrition, tobacco cessation, weight management, depression management and better sleeping.

Both a health savings account (HSA) and a health reimbursement arrangement, components of the consumer-directed health plan rolled out in 2007, provide an incentive for participation. The Simple Steps program dovetails with the medical benefits design, so participants can earn dollars to offset part of their deductible.

An essential success factor of the Simple Steps program and the H&P initiative is the high level of senior management buy-in, which Aetna had from the beginning. Nancy Lusignan, Benefits Manager and leader of the H&P effort, notes, "Our corporate culture of health is strong. We focus on employee health asset management as a key to our corporate success." She says this is possible because senior leadership takes responsibility for ensuring a healthy workforce. It's not just the responsibility of the

Human Resources department; employee health is infused among those who sit in the C-suite and throughout the organization.

All new wellness initiatives receive sponsorship from the executive level. Sponsorship may come from the Benefits department or from Human Resources, to which Benefits reports. Human Resources reports directly to the CEO, so sponsorship often occurs at

the highest level. Having support at this level of the organization has helped integrate wellness into the company's strategic direction. A key message comes from the top that encourages people to be well and to take care of themselves both inside and outside of the organization.

This level of buy-in helps ensure that *Wellness Works*, Aetna's overarching employee wellness program that includes Simple Steps, has the resources it needs to manage and grow the H&P initiative. *Wellness Works* depends on other departments to provide resources and knowledge essential to its success, including Clinical Operations, Product Innovation and Development, Procurement, Programming and Informatics. Strong senior-level support ensures that these departments are also committed to the success of *Wellness Works*.

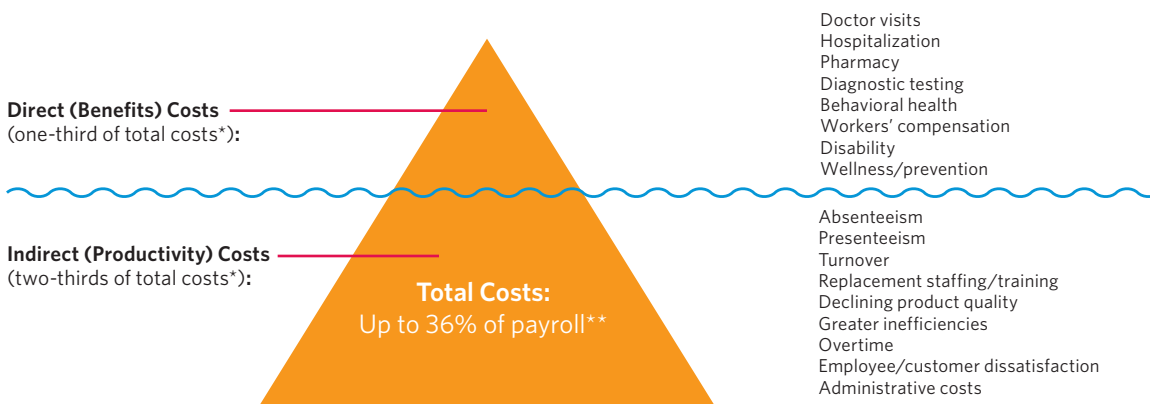
The Benefits team also influences how external products move forward to Aetna customers. External and internal product development is a two-way street; *Wellness Works* is often consulted about wellness and H&P resource development for external consumption. The *Wellness Works* team typically works with Product Development to try out a new concept internally before taking it to market. It's really important, says Lusignan, that "we've done it here with our people and we know that it works." In fact, many of the communication concepts developed by Aetna's internal team have been adapted for use with customers. The proven track record of a communication campaign helps sell the value to other employers.

Drivers of Self-Reported Measurement

Few companies have objective data related to on-the-job performance (presenteeism), and absence data is hard to capture given the move toward paid-time-off (PTO) policies. Aetna was no exception. Its PTO policy made it difficult to quantify health-related absence. Without a tool to measure health-related performance, it could only broadly estimate the magnitude of loss based on secondary sources. Aetna knew that the numbers were large—likely larger than direct medical costs.

Yet Aetna, like most companies, expended great effort shifting costs and "tweaking plan design" to manage direct medical costs, while the largest chunk of health-related costs lay undisturbed, "below the water line." The iceberg analogy, illustrated on the following page, provided a compelling visual that the *Wellness Works*

WELLNESS WORKS HAS PRODUCTS AND PROGRAMS THAT GO BEYOND THE TIP OF THE ICEBERG



Sources:

* Brady W, Bass J, Moser R et al. Defining Total Corporate Health and Safety Costs Significance and Impact: Review and Recommendations. *Journal of Occupational and Environmental Medicine*. 1997;39:224-232; 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 Wilkins; 2003: 40-152; Loeppke R, Taitel M, Richling D, Parry T, Kessler R, Hymel P, Konicki D. Health and Productivity as a Business Strategy. *Journal of Occupational and Environmental Medicine*. 2007;49:712-721; Loeppke R, Taitel M, Haufle V, Parry T, Kessler R, Jinnett K. Health and productivity as a business strategy: a multiemployer study. *Journal of Occupational and Environmental Medicine*. 2009;51(4): 411-28; Parry T, Schweitzer W, Molmen W. The Business Case for Managing Health and Productivity. Integrated Benefits Institute. 2004

** *The Total Financial Impact of Employee Absence*, Mercer Study sponsored by Kronos, October 2008.

team used to make their case. If two-thirds of health-related costs are indirect, that's a huge target. If Aetna can better manage even 10% of those costs, the benefit potential was huge. That got heads nodding.

But compelling visuals and nodding heads are not enough to justify an investment in H&P management; Aetna needed data. Having H&P data on its own employees would serve three basic needs: First, it would inform Aetna's overall H&P strategy. Second, it would guide the company toward the most effective

Aetna finds that consumer-directed health plan members tend to be more engaged and more aware of their health status. And greater engagement leads to positive behavior change and likely improvements in productivity.

areas for intervention. Third, it would provide a baseline against which it could determine the effectiveness of the approach.

The move to a consumer-directed health plan (CDHP) provided an interesting focus of research: Does this new group health benefits

approach have a salutary influence on productivity? Aetna finds that CDHP members tend to be more engaged and more aware of their health status. And greater engagement leads to positive behavior change and likely improvements in productivity.

In Aetna's case, the pathway to health and productivity was straightforward: The Benefits department is a "purchaser" of the Simple Steps program, a

component of the Aetna Health Connections product portfolio offered to employers. Integrating select productivity measures with data from the proprietary HRA data offered as part of Simple Steps would provide the link Aetna needed to inform program development. It wasn't hard to connect the dots.

Implementing the Measurement Initiative

Aetna's first step was determining the productivity questions to include in the Simple Steps HRA. A small team researched the tools available using the Gold Book⁵ as a guide. Three priorities guided their selection process: the validity of the question set, the ease of administration, and the capability to integrate the productivity data with other data, such as case management and disease management. The team consulted an internal medical director who was familiar with the WLQ and believed it best served Aetna's purposes. As a result, 15 questions were included in a section called Work & Daily Life.

The Simple Steps HRA is offered on a continuous basis; employees can complete the HRA at any time of the year and update it as desired. Because it is web based, employees can fill it out either at work or at home. The Wellness Works staff keeps employees informed about the Simple Steps program through ongoing online messaging.

Aetna has a well-defined incentive program aimed at getting and keeping employees engaged in the program. Employees are required to complete the Simple Steps HRA to be eligible for incentives. Employees can earn up to \$500 for participating in

⁵ Lynch W and Riedel J. *Measuring Employee Productivity: A Guide to Self-Assessment Tools*. Institute for Health and Productivity Management, 2001:67.

the healthy-eating and physical fitness programs or by achieving disease management goals set mutually with a nurse case manager. An employee's family can also earn up to \$500. These incentives get credited to the employee's HSA or health reimbursement arrangement. Employees not participating in an Aetna employee medical plan receive the incentive in their paycheck as taxable earnings. The number of employees completing the HRA has climbed steadily, from 5,230 in 2005 to 21,546 in 2010.

Using the Outcomes

A detailed report of the WLQ results highlights two key factors affecting the productivity of Aetna employees:

- Health-related time lost from work (absenteeism)
- Diminished ability to perform tasks while at work (presenteeism)

The report is organized into four scales that reflect a specific category of job tasks. The ability to perform these tasks has been shown to relate to productivity and is sensitive to the effects of varying health problems.

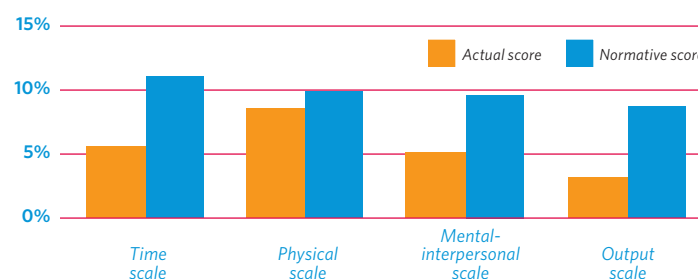
- **Time scale**—addresses the difficulty of managing a job's time and scheduling demands
- **Physical scale**—covers a person's ability to perform job tasks that involve bodily strength, movement, endurance, coordination and flexibility
- **Mental-interpersonal scale**—addresses the difficulty of performing cognitive job tasks and/or tasks involving interacting with people on the job
- **Output scale**—covers a person's ability to meet demands for quantity, quality and/or timeliness of completed work

The graph at the upper right shows the areas of productivity affecting Aetna employees and how Aetna's workforce compares with a normative score of a sample of employed individuals in the United States (the national sample). The major productivity drain for Aetna (more than 8% of work impairment) is due to physical issues. On the whole, compared with the national normative score, Aetna employees are doing quite well. Their level of impairment is less than half of the national sample for time management, mental-interpersonal issues and total output.

These scales are then combined to provide a range of health-related productivity measures. The percentage

PRESENTEEISM

Average percentage of time with health-related difficulty performing work tasks



The normative scores were assembled by the WLQ research team. They are based on a representative household sample of employed individuals in the United States.

ABSENTEEISM

Average percentage of productivity loss by risk level due to personal health (for the prior two weeks)

Overall Risk Level	Number of Respondents	Percentage of Respondents	Productivity Loss by Risk Level
Low (1-25)	21,905	37.05%	1.56%
Moderate (26-50)	21,481	36.33%	1.61%
High (51-75)	14,220	24.05%	1.99%
Very high (76-100)	1,523	2.58%	3.92%

of productivity loss by level of risk is a useful measure. The Wellness Works staff tracks the percentage of loss due to time missed from work by overall risk level. This provides data to assess a basic tenet of the

Simple Steps program: Keeping low-risk individuals healthy and reducing high-risk levels can have a significant impact on the amount of productivity lost by employers each year.

The table above highlights the impact of risk level on absenteeism: As risk level increases, so does absence.

Knowing the prevalence of participants by risk level and the corresponding percentage of absence provides the Wellness Works staff with actionable information on the most valuable targets for risk-modification efforts.

Knowing the prevalence of participants by risk level and the corresponding percentage of absence provides staff with actionable information on the most valuable targets for risk-modification efforts.

The percentage of productivity loss attributed to the most prevalent chronic conditions is especially useful for programming purposes where greater specificity is required. The graph at the right highlights the percentage of productivity loss for the top nine most prevalent conditions, comparing Aetna to the national sample. Two medical issues, chronic obstructive pulmonary disease (COPD) and depression, are the major drains on productivity. For all conditions, however, Aetna employees are well below the productivity loss experienced by the national sample. The Simple Steps staff uses this information as a reference guide to ensure that directional trends are favorable.

This productivity information is hard-wired into an overarching report called *Aetna Integrated Health Solutions*. A wide range of measures are included: demographics of participants, medical conditions, pharmacy utilization, short-term disability claims, health assessment metrics, program engagement and presenteeism metrics. The report provides a vehicle for understanding how workforce productivity ties into an overall corporate health solution. An executive dashboard summarizes the key drivers of a population risk overview, emphasizing employee engagement, population risk and health conditions, and productivity loss.

Making It Real

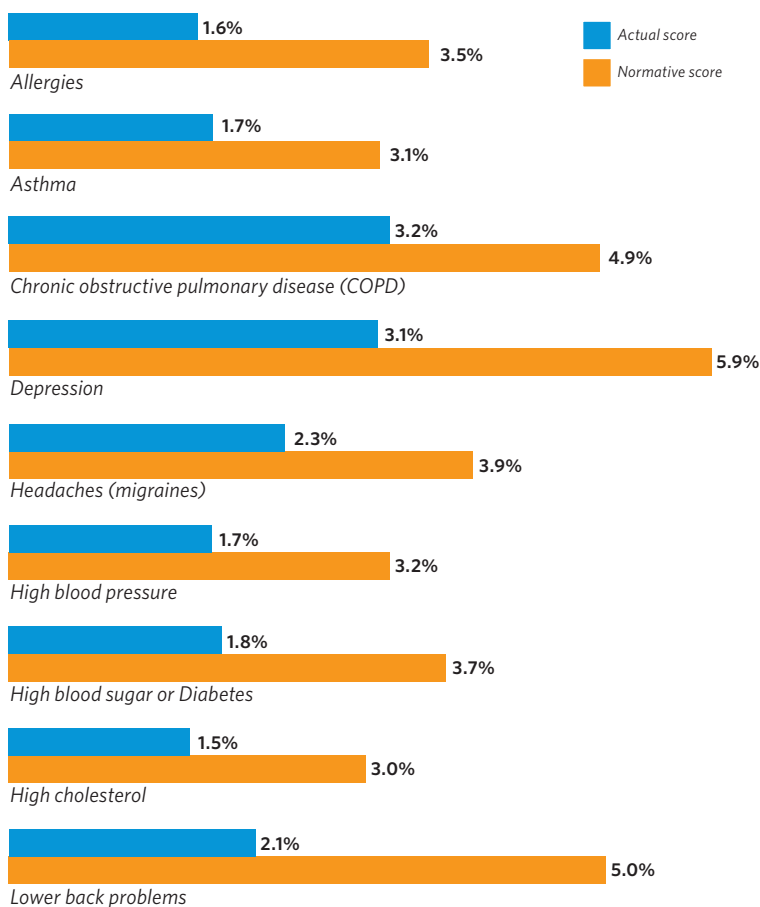
Lusignan shared a recent example that *really* got people's attention. In 2004, the exercise rate of Aetna employees (targeted as three or more times per week) was only 29%. Aetna's Analytics department determined the direct medical cost of not exercising, then added indirect costs (at a 3:1 ratio); the potential for cost avoidance was eye-popping. This led Lusignan and her team to create a new exercise program called *Get Active Aetna*, a team-based fitness competition now in its fourth year. Today, the percentage of employees exercising at least three times a week is 61%. More important, Lusignan's team was able to quantify a positive ROI for the program.

Even though the C-suite is on board, the Wellness Works team takes nothing for granted. They communicate results regularly in a variety of ways, including:

- A quarterly report with metrics
- Periodic meetings with senior leadership to ensure "face time"
- Frequent e-mails updating the program, such as the report on *Get Active Aetna*

PRESENTEEISM

Average percentage of productivity loss for top nine most prevalent health conditions



The normative scores were assembled by the WLQ research team. They are based on data from the national sample and a large benchmarking database.

- Presentations at quarterly meetings of top leaders with their management teams
- Employee-facing dashboards—a new approach to reporting quarterly on modifiable risk factors and their impact on cost—posted on the internal Aetna website

Because senior leadership is committed to H&P, the team has not experienced many barriers to the H&P initiative. One area of concern, however, is the need to get stronger support from line managers, who are focused on their specific production goals. The big issue: How to convince them that a healthier worker is more likely to help them meet their production goals. The team is trying to get at this by monitoring a question on the employee survey: *Does your manager*

support the company's wellness program? Knowing more about this will help Lusignan and her team build interest among line managers.

Making a Health and Productivity Approach Stick

Lusignan is intent on ensuring that the H&P strategy has staying power. To that end, she focuses on three business drivers: First, build it into the corporate strategy. Aetna believes that its strong data analytics capability sets it apart in the market; H&P data is central to its *Integrated Health Solutions* reports. Second, make sure that senior management supports it. Aetna is fortunate to have buy-in at the CEO level. Third, don't assume that senior-level buy-in lasts forever. The team continually educates senior management regarding the effect of health and productivity on the profitability of the organization.

Aetna

Lessons Learned

- Without the health and productivity data, Aetna's program would be less robust; the data drive effective programming. Get Active Aetna is a good example of how data make a difference.
- The level of support and funding is much greater because solid data are helping make the case.
- Communication of programs and their results are essential to ensuring engagement and participation by employees (and leadership) and to maintaining interest over time.
- You've got to have a starting point. To move an H&P initiative forward, you need to review your own company's data to understand your specific needs.
- By building credibility internally, the Wellness Works team was able to influence how H&P is positioned with Aetna clients. This is the power of "We've done it here," which extends their credibility to influence a significant number of Aetna customers and their employees.
- Not having credible evidence of the financial cost of lost productivity was an issue when the Wellness Works team started building an H&P initiative. (This was especially an issue for Aetna customers who could understand the logic but perceived that these were "fluff dollars.") A major step forward, according to the team, is that "Now we can measure it, and we are starting to show that we can better manage both direct and indirect costs."



CASE 2: AMERICAN EXPRESS

The Value of Worker Health and Productivity in a Global Context

Synopsis

With more than half its employees working outside the United States—and sizeable operations in Mexico, India, Singapore, the United Kingdom and Canada—American Express needed an international business case for its health and productivity strategy. Although in many cases medical costs aren't an issue for the company because the payment for and the provision of medical services are handled predominantly by the government, one goal spans all countries and cultures: keeping people at work and performing optimally.

Company Overview

Established in 1850 as a U.S. express delivery service, American Express is a global leader in payments, expense management and travel solutions for consumers, small businesses, mid-sized companies and large corporations. It was ranked eighty-eighth among the Fortune 500 in 2010. In 2010, \$713 billion was spent worldwide using the 91 million American Express cards that are accepted by more than 200 countries and territories. American Express prides itself on providing superior customer service and earned the 2010 J.D. Power and Associates award for highest customer satisfaction for the fourth consecutive year. (For more information about the company, visit www.americanexpress.com.)

Headquartered in New York City, American Express employs approximately 60,000 workers around the world, with 28,000 in the United States. The workforce is 64% female and 36% male, with an average age of 42 years.

Most workers (95%) are employed full-time. A vast majority of U.S. workers are covered in a self-insured health benefit.

Measurement Background

In December 2009, American Express was poised to move its health management strategy to a higher level with the hiring of Dr. Wayne Burton as Vice President and Chief Medical Officer. The company is particularly interested in the relationship between worker health and productivity. Senior management accepts the premise that healthy workers perform at a higher level. To understand and adopt initiatives around that concept for its own employees would require an internal research effort that would inform the development of a world-wide health and productivity management (HPM) program.

Known for his leadership in the area of employee health and productivity (H&P) and his cutting-edge research exploring the connection between objective productivity measures in a call

Measurement Overview

Tool Used:

Work Limitations Questionnaire (WLQ)—short form (see *Self-Report Measurement Tools* for description)

Offered to:

United States: In fall 2010, all U.S. employees and their spouses/domestic partners received the WLQ as part of the health risk appraisal (HRA) from a U.S.-based vendor

India: In Q1 2010, all India employees received the WLQ in a culturally adapted HRA from an India-based company

Singapore: In Q1 2011, all Singapore employees received the WLQ in an HRA from an India-based vendor

Canada: To be offered in Q3 2011 to all Canadian employees and their spouses via the WLQ in an HRA from a global vendor

Argentina: To be offered in Q3 2011

Sweden: To be offered in Q3 2011

United Kingdom: To be offered in Q3 2011

Mexico: To be offered in Q3 2011

Australia: To be offered in Q4 2011

Responsible Parties:

Wayne Burton, MD
Vice President and
Chief Medical Officer

Robert Holdom
Vice President,
International Benefits

center environment with self-reported data, Dr. Burton was an obvious choice. From his perspective, American Express possessed qualities that were predictors of success. “Senior management addresses employee health as a key human capital asset required for corporate success. The company also takes personal responsibility for ensuring a healthy workforce,” he says. He knew that its commitment to a

American Express’s commitment to a positive culture of health provided a strong foundation for “building out” a leading-edge health and productivity management initiative.

positive culture of health provided a strong foundation for “building out” a leading-edge HPM initiative.

Dr. Burton summarizes the H&P value proposition this way: “American Express is a call center environment. Issues of service quality, on-the-job performance and customer satisfaction are of paramount importance. Interaction with customers is personal, direct and immediate. It’s really important to have healthy, engaged employees on the phones.” In short, the values and the competence of American Express are exhibited during each and every phone interaction. This demands an engaged and effective workforce.

American Express expects to ensure a highly qualified, loyal and productive workforce by paying attention to the health of employees and their families, providing a supportive health culture and offering a wide range of health improvement resources. The company’s Global Healthy Living vision crystallizes the components of the approach (above right).

In March 2009, the company launched the American Express Healthy Living Campaign, the vehicle for driving the vision. Program elements include:

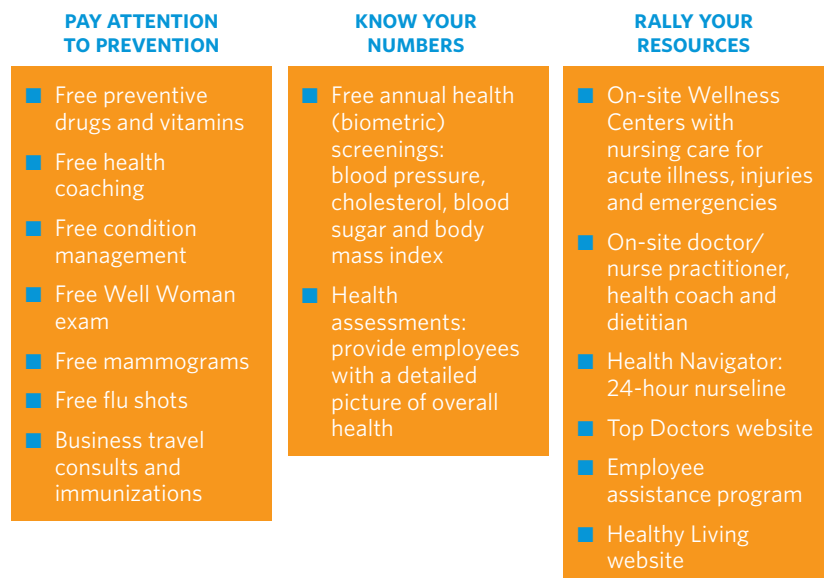
- A comprehensive HRA, including the short version of the WLQ self-report survey, offered annually
- On-site biometric screening, including a full lipid panel, fasting glucose, height and weight
- Annual reporting on productivity and program trends
- A variety of internal support programs, including health coaching

The specific components of the Healthy Living Campaign are organized around three steps (lower right): Pay attention to prevention, know your numbers and rally your resources.

THE AMERICAN EXPRESS GLOBAL HEALTHY LIVING VISION



THREE STEPS TO HEALTHY LIVING



Dr. Burton’s research at Bank One (now JPMorgan Chase) showed that attention to personal health risks and better management of chronic conditions resulted in significant productivity improvements.⁶

⁶Burton WN, Chen C, Schultz AB et al. The association between health risk change and presenteeism change. *Journal of Occupational and Environmental Medicine.* 2006;48(3):252–63.

Drivers of Self-Reported Measurement

This case study is a lesson about the opportunities and the challenges of implementing an HPM initiative across myriad cultures. With more than half its employees working outside the United States, one of American Express's first challenges was figuring out the international H&P business proposition. American Express has sizeable operations in Mexico, India, Singapore, Europe and Canada. Each of these countries has a different value proposition regarding healthcare delivery and medical costs. In many cases, medical costs aren't really a major issue because the payment for and the provision of medical services are handled predominantly by the government.

Although the healthcare systems are uniquely different, keeping people at work and performing optimally is a universal goal. Dr. Burton was impressed by how strongly the country manager in India supports wellness programming. "He was so articulate in his explanation of the importance of wellness to on-the-job performance." The research in India linked health risk appraisal (HRA) data with employee customer service. For senior management and the country manager, this linkage of the Healthy Living program to a key American Express value justified the program investment from an operations perspective.

Objective Measures of Performance

Objective productivity measures for call center employees are regularly tracked. These measures include total number of phone calls answered, talk time, transfer/hold time, time for after-call work and total unavailable time.

Dr. Burton's team at Bank One had written a seminal article in 1999 on the objective measurement of call center performance.⁷ They found that number of health risks correlated quite closely to an employee's level of productivity. At American Express, the opportunity emerged to re-

examine these relationships. Correlations between objective data and self-reported findings would provide confidence in the broad application of self-reported measures. American Express's goal is to link

the results from the eight-question version of the WLQ to the objective call center productivity measures and the HRA information.

Self-Reported Measures of Performance

Many American Express employees don't work in a call center. For them, the only way to measure productivity is through self-reporting. Getting a companywide perspective on how employee health influences productivity meant that Dr. Burton's team would need to use self-reported measurement as the reference standard. Using self-reported measures had an interesting advantage: It provided data on a large driver of productivity loss—presenteeism. Having this data for all employees, including call center workers, would provide a comprehensive view of total lost productivity due to poor health. Equally important, it would provide actionable information for focusing the Healthy Living program for the most favorable outcomes.

Ultimately, the decision to use self-reported information as a source of H&P data hinged on a number of factors:

- There is no other way to capture this data for non-call center employees.
- A range of well-validated self-report instruments is available.
- The various American Express HRA vendors were willing to add the WLQ question set to their questionnaires.
- Baseline productivity data would provide a benchmark to determine the effectiveness of the Healthy Living program.
- Senior management expects a strong research and evaluation component. This was ensured through Dr. Burton's relationship with the University of Michigan's Health Management Research Center and its familiarity with the WLQ.

Dr. Burton had used the WLQ extensively during his tenure with JPMorgan Chase and its predecessor banks. He selected this tool for the H&P initiative at American Express for several reasons: It's a comprehensive tool organized around four domains (time management, physical tasks, mental-interpersonal tasks and output tasks). Mental health is a particularly important area, given the company's predominantly female workforce (depressive disorders are twice as common in women as in men) and the cognitive, rather than physical, nature of the job. The WLQ has

⁷ Burton WN, Conti DH, Chen CY et al. The role of health risk factors and disease on worker productivity. *Journal of Occupational and Environmental Medicine*. 1999;41(10):863-77.

been validated extensively in a variety of settings. Plus, it tends to provide a conservative measure of lost productivity. And the respondent burden is low, with the short WLQ survey length translating to higher participation rates.

HRA Selection

The Benefits team was challenged to select HRAs that could be delivered in a culturally appropriate way. Some of the key selection factors included:

- Culturally appropriate to the country
- Ability to customize and add a reasonable number of lost-time questions
- Meaningful aggregate management reports highlighting opportunities for interventions
- Individual reporting to employees that identifies and explains modifiable health risk factors
- Reasonable cost per participant
- Information technology capability, data security and confidentiality
- Availability in the language of the targeted country
- Presence of core questions to provide global consistency

Consistency of productivity measurement was ensured by using one validated question set—the WLQ. Regardless of the HRA vendor, all HRAs contain the eight-question version of the WLQ.

Fulfilling the expectations of the expanded focus on health requires a more complete integration of health metrics. This is a compelling issue for American

Integration within the United States is one thing; tying all of this data together globally is quite another.

Express. Integration within the United States is one thing; tying all of this data together globally is quite another. Full integration is scheduled for 2011 through the University of

Michigan Health Management Research Center in Ann Arbor. Upon completion, the integrated database will include personal information, medical and pharmacy claims, short-term disability, HRA data, wellness program participation and productivity data.

A caveat on self-reporting: The use of self-reporting was not an issue for American Express management. They're comfortable with a range of self-report tools, including employee satisfaction and health risk profiling.

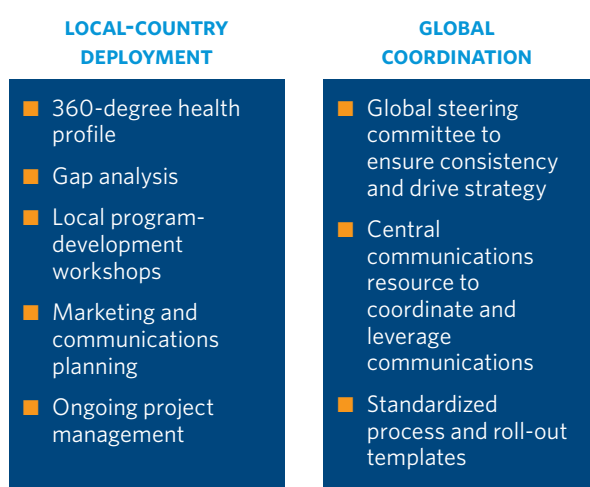
Implementing the Measurement Initiative

Taking the program globally added a wide range of new challenges. Dr. Burton cites three of them:

- 1 **How do we position the Healthy Living Campaign with culturally appropriate incentives to engage participation?** Financial and nonfinancial incentives vary greatly from country to country; only in the United States is the incentive linked to the health plan. The important point here is that what is essential in the United States is not necessarily a consideration globally. In India, a \$10 voucher for a healthy meal selection in the employee cafeteria resulted in HRA participation of more than 70%. This demonstrates the value in this culture of a modest incentive driving engagement. A similar incentive in the United States would be expected to result in very low HRA participation.
- 2 **How do we balance the need for a consistent look and feel for the Healthy Living Campaign while ensuring relevance locally?** For the Healthy Living Campaign to have relevance and staying power, there is a need to ensure that it is appropriate for each local market. Flexibility is encouraged within a set of core program guidelines. For example, U.S.-based on-site clinics originally focused on treating employees for a variety of acute medical conditions such as sore throats, urinary tract infections and acute back pain. More recently, these clinics have added a variety of preventive services focused on early detection, such as routine physicals and women's health examinations and biometric screenings for blood pressure, blood sugar and lipid levels. They were rebranded "Healthy Living Wellness Centers." In contrast, in the United Kingdom on-site clinics were focused on workplace occupational medicine issues, including ergonomics and workplace injuries. The UK clinics also are being rebranded as Healthy Living Wellness Centers while maintaining compliance with UK occupational regulations.
- 3 **How do we prioritize our activities across 45 different markets?** The first consideration was size. The Benefits team, headed up by the Vice President of International Benefits, focused on the company's 10 markets with 700 or more employees. They evaluated the likely impact (culture, cost and structure of the medical system) against likely difficulties (vendor availability, culture, local resources and number of sites). Based on this prioritization, the team evaluated the markets to

determine the best fit. For example, India proved to be a very good fit. It's an important worksite for American Express, with about 5,000 employees. Senior management support was strong. Wellness resources that put India at the top of the list included the availability of an excellent local HRA vendor and a high-quality hospital network to staff and manage on-site clinics.

The overall response to these challenges balanced the specific deployment needs of each country with global coordination, as shown below.



A Global Wellness Steering Committee was established to bring strategic direction and rigor to the process, including development and evaluation of the global program. It is coordinated by Bob Holdom, who heads International Benefits. Holdom is responsible for holding members accountable for agreed-upon actions and providing weekly status updates globally. Programs and services are developed based on local data but with global coordination because initial funding is provided from global operations. Sustainability depends on demonstrating ROI to each country's management.

If We Build It, Will They Come?

To a great extent, that depends on how it's communicated. At American Express, communication is king. The company takes a robust approach to getting the message out and keeping it relevant. Its methods for success include:

- Simplified, sustained messaging
- Leveraged marketing by globally branding Healthy Living with eye-catching promotional materials and use of well-recognized national athletes as program spokespersons

- Using a variety of media, including print, online, e-mail, posters, flat-screen TV monitors and elevator screens
- Featuring employees' health stories and goals
- Tying to American Express's "blue box values," espousing a culture with service at its core—the company dedicates extensive resources and effort to satisfy and surprise customers with thoughtful, creative and personalized solutions; program managers are encouraged to use that same philosophy within the Healthy Living Campaign
- Fostering internal competition
- Reporting results

Status of Measurement Initiatives

Three countries have completed H&P measurement: the United States, India and Singapore. Following is a brief summary of each.

United States

In the fall of 2010, the HRA was administered to all full-time U.S. employees. It was offered primarily via the Internet, although a paper-based version also was available (which got little use). Incentives included a \$100 contribution to an employee's flexible spending account (FSA) and \$50 for spouses or domestic partners. The response rate was 55%. Biometric screenings were conducted at more than 25 locations, with results entered electronically into the HRA. Health coaching is available at no cost for employees, spouses and domestic partners, with a financial incentive deposited in the employee's FSA for both participation and goal attainment. Individual employee results have been integrated with medical and pharmacy claims data. Call center productivity is being integrated with customer service data.

India

In the spring of 2010, an HRA was offered to all employees in India via the company's intranet. A \$10 voucher for a healthy meal in the cafeteria encouraged participation. Approximately 70% of employees participated. Biometric testing was offered at each worksite. HRA data were integrated with customer service data for call center employees to determine which health risks were associated with customer service outcomes.

Singapore

In the second quarter of 2011, an HRA was offered to all employees in Singapore via the company intranet. The first 100 to complete the HRA received a free

personalized health coaching session. Employees could also enter into a drawing for an iPod Touch, awarded weekly over two months. This was the first time an HRA was offered; it resulted in a 45% participation rate. Biometric screening was conducted at each worksite.

Using the Outcomes

Summary HRA results by country are becoming available as the HRA is rolled out globally. These results are incorporated into a global Healthy Living dashboard, currently under development. Metrics such as the percentage of employees who complete an HRA and the percentage of employees who smoke are part of the dashboard.

In addition, where possible, HRA outcomes are linked with other relevant data. In the United States, HRA results data are linked with medical, pharmaceutical and disability claims by the University of Michigan's Health Management Research Center. In India, customer service data are linked to HRA data.

Each country will have reports on the impact of health on productivity using the WLQ questionnaire and self-reported absenteeism. Over time, this dashboard will become increasingly sophisticated, with the ability to compare and contrast results for the global workforce.

Making a Health and Productivity Approach Stick

Dr. Burton emphasizes a key element for ensuring that H&P has staying power: Make it understandable and relevant to the business leaders. "We believe that sustainability is dependent on our ability to demonstrate outcomes that are relevant to business leaders," he says. A calculation of the return on investment is a highly valued outcome measure at American Express. The ROI for the Healthy Living Campaign is calculated by an independent source respected by senior management. The company's Senior Vice President of Global Compensation and Benefits meets quarterly with senior management to present an update on the program. The update always addresses progress on ROI and actual-versus-planned savings.

In most foreign locations, medical claims data are not available. The value of the Healthy Living Campaign in these countries is primarily focused on improving work productivity and increasing employee engagement. In the United States, numerous published studies have demonstrated that improvements in health risks are linked to reduced absenteeism and presenteeism.⁸ These types of productivity improvements are being linked to customer service data as a means of making the case that improving the performance of American Express's workforce results in enhanced customer service.

⁸ Pelletier B, Boles M, Lynch W. Change in health risks and work productivity over time. *Journal of Occupational and Environmental Medicine*. 2004;46(7):746-54; Burton WN, Chen C, Schultz AB et al. The association between health risk change and presenteeism change. *Journal of Occupational and Environmental Medicine*. 2006;48(3):252-63.

American Express

Lessons Learned

- Develop a data-driven strategy.
- Use a validated productivity questionnaire.
- Select a culturally appropriate HRA.
- Develop a comprehensive, consistent marketing strategy—even in a global context.
- Incorporate productivity questions into an existing HRA.
- Keep the number of HRA questions to a minimum to lower the response burden.
- Test the tool first with employee focus groups.
- Use the generated data for population health planning.
- Develop a global metric dashboard.

CASE 3: BAYSTATE HEALTH

Health and Productivity: An Important Element of Baystate Health’s Workplace-of-Choice Strategy

Synopsis

A looming workforce shortage for critical jobs is a key factor driving Baystate’s health and productivity initiative. Because the nature of work at Baystate is focused on high-quality patient care, it’s important to have the right people in the right jobs. Baystate developed a 10-year plan to be the “workplace of choice” and to keep its people on the job and performing well; building a culture of health is a key component of that effort. Originally focused on addressing medical costs, Baystate’s strategy has evolved to become a more integrated component of its “people” focus with the inclusion of health-related performance.

Company Overview

Baystate Health (Baystate) is an integrated healthcare system located in western Massachusetts that comprises three major facilities: Baystate Medical Center, Baystate Mary Lane Hospital and Baystate Franklin Medical Center. Baystate Medical Center, the flagship hospital, is credentialed as a Level 1 trauma center and has been named a Thomson Reuters Top 100 Hospital and a Top 50 Cardiovascular Hospital; it is also designated a Magnet hospital for excellence in nursing services. Academic affiliation includes designation as the western campus of Tufts University School of Medicine. (For more information about the company, visit www.baystatehealth.org).

Baystate employs 10,000 workers, primarily from the greater Springfield area and western Massachusetts. The workforce is 75% female and 25% male, with an average age of 44. The majority of employees (70%) are covered in a self-insured health plan provided through the Baystate Health entity Health New England.

Measurement Background

Barbara Linton Pelletier, Baystate’s Director of Health, Wellness and Work/Life, describes a looming workforce shortage for critical jobs as a key factor driving Baystate’s health and productivity (H&P) initiatives. Because the nature of work at Baystate is focused on high-quality patient care, it is important to have the right people in the right jobs. Baystate developed a 10-year plan to be the “workplace of choice” and to keep its people on the job and performing well.

Building a culture of health is a key strategy aimed at attracting and retaining a high-performing workforce. The strategy was originally focused on addressing medical costs and was viewed as an approach to managing expenses. It has evolved over the years, however, and as a result of the 10-year plan has become a more integrated component of Baystate’s “people” strategy.

The pathway to Baystate’s goals of being a workplace of choice and

Measurement Overview

Tool Used:
Work Productivity and Activity Impairment Questionnaire (WPAI) (see *Self-Report Measurement Tools* for description)

Offered to:
All employees

Response Rates:
2008: 75%
2009: 38%
2010: 38%

Incentives Offered:
Gift cards offered in 2008; beginning in 2009, wellness credits toward \$200 that can be applied to a health insurance premium or flexible savings account (FSA)

Measurement Time Frame:
Annually, collected over a 12-month period

Responsible Party:
Barbara Linton Pelletier
Director of Health, Wellness and Work/Life

maintaining high job performance levels consists of a broad range of strategies and tactics. The following three are particularly relevant to the Health, Wellness and Work/Life team:

Flexibility—Provide flexible work arrangements and benefits choices that enhance health, wellness and work/life balance.

Culture—Identify the appropriate culture for Baystate, including health and wellness along with productivity management.

Measurement—Develop measures for all human resources (HR) strategies and review quarterly progress on an HR dashboard.

Baystate recognizes the value that long-term employees can offer and celebrates employee length of service. Baystate's employee-centric reputation fosters positive employee relations but also comes with the potential for workforce disruption when long-tenured employees begin to retire. Senior management acknowledges that the health of the community population is critical to the health of Baystate's future workforce.

Baystate Healthy, the company's health management program, plays a central role in supporting these strategies. The program delivers something for

Baystate Healthy delivers something for everyone to attract new talent and, for those already employed, "provides the energy needed to take on challenges both at work and at home."

everyone to attract new talent and, for those already employed, "provides the energy needed to take on challenges both at work and at home." Traditional health-promotion programs, such as fitness, smoking cessation, nutrition, health screenings, disease management and stress

management, are part of the menu, which also includes unique offerings such as financial and legal resources, career growth and caring for others.

Management stays abreast of and supports the evolution of this expanded approach to human capital management as central to the overall success of the company. Pelletier and her team regularly address senior-level meetings on health, wellness and work/life issues. She works closely with the Culture of Health Advisory Committee, a group made up of

managers and directors across the organization, representing all three hospitals. And she is frequently on the agenda for other leadership groups.

Since 2007, the online digital health coaching program offered by HealthMedia Inc., Baystate's health management partner, has provided a confidential, individualized resource to create a personal action plan for each participant. As a participant navigates through the health risk assessment (HRA), called Succeed, questions change to pinpoint personally relevant motivation and self-confidence factors. The HealthMedia program is continuously updated by epidemiologists and behavior-change experts; works across a wide range of programs, including wellness, behavioral health and disease management; and reports improvements using a dashboard approach.

Baystate Healthy Rewards is the program aimed at engaging employees in their own health and encouraging healthy lifestyles. Upon completion of the Succeed HRA, participants begin earning points. Some activities earn 25 points; others, such as health screenings and consultations, earn 50. Employees who earn 200 points are eligible for a \$200 wellness credit toward their health insurance premium or a contribution to their Flexible Savings Account (FSA). Monthly raffles for iPads and other prizes also encourage completion of the HRA.

Drivers of Self-Reported Measurement

Shifting from a focus on medical costs toward inclusion of health-related performance is part of Baystate's 10-Year Strategic Plan. Although Pelletier is keenly sensitive to medical cost issues, she also is familiar with the emerging evidence on the high cost of health-related productivity loss. In a previous position, Pelletier contributed to developing a health and productivity strategy at Aetna. That experience resulted in a set of skills that would prove useful as Baystate incorporated performance as a driver of success.

Senior management had issued a directive to develop an engaged, high-performing workforce. Baystate's strategic plan was explicit about measuring all HR strategies and reviewing quarterly progress on an HR dashboard. The Baystate Healthy Advisory Group (an employee advisory group that supports program development) was on board. The pieces were in place for measuring productivity. Pelletier knew that expanding the Baystate Healthy value proposition to include

improved employee performance would magnify the program's outcomes potential. Fortunately, HealthMedia had already integrated a productivity measurement tool into its program offerings.

The HealthMedia measurement tool relies on employee self-reported data, which meant that a key issue would have to be addressed: *How accurately does self-reporting reflect reality?* Senior management is aware that a strong relationship exists between personal health and performance. They accept the logic of getting a more complete picture of health-related costs by including productivity measures. But, according to Pelletier, "The financial benefit of improved productivity isn't immediately visible on anyone's bottom line." And the approaches used to put a monetary value on self-reported lost productivity may be considered a bit simplistic. Pelletier's perspective is this: "The link between health and productivity data is clear, but we are careful not to oversell the monetary value."

Occasionally, Pelletier or her staff is questioned about the estimates of lost productivity. Their response: "If the cost estimates seem high, cut them in half;

When questioned about the estimates of lost productivity, Pelletier or her staff responds: "If the cost estimates seem high, cut them in half; the amount is still significant."

the amount is still significant. Also keep in mind that people completing a self-report questionnaire may tend to underestimate lost productivity. The socially desirable response bias is generally toward

a higher level of productivity, so overestimation of lost productivity is not likely."

Baystate's use of a paid-time-off bank means that accurate data on incidental health-related absence are unavailable; and without objective measures of health and performance, the only way to get the information is to survey employees. In 2007, Baystate's Health, Wellness and Work/Life team selected the Work Productivity and Activity Impairment Questionnaire (WPAI) as its measurement tool. The WPAI met the key selection criteria:

- Ease of administration
- Strong validation
- Short and easy to complete
- Strong vendor support
- Useful and ongoing reporting

HealthMedia had already incorporated the set of WPAI questions into its Succeed HRA, ensuring all its clients, including Baystate, ready access to productivity outcomes. The WPAI was well validated, and a shortened version of the HRA, called *Succeed Snapshot*, required less than 10 minutes to complete. HealthMedia provided ongoing product support and tracked progress using an H&P dashboard that provided frequent updates on the status of program participants.

Implementing the Measurement Initiative

In October 2007, Baystate offered all employees the HealthMedia digital health coaching program. A flyer highlighting the HRA as the "first step to enhancing your health" was distributed by e-mail and posted on Baystate's website and throughout its facilities. Employees could earn 50 points by completing the questionnaire within six months and 25 points if they completed it within a year. Each year, the HRA would highlight their unique health needs and challenges, resulting in a customized wellness plan.

Employees have access to programs and resources 24/7 throughout the year. Participation results are aggregated and reported over a 12-month period. Year 1 of the program includes HRAs completed between October 2007 and September 2008.

By the end of that first year, 75% of eligible employees had completed the HRA, providing strong baseline data. The primary extrinsic incentive was a \$100 gift card for completing the assessment in the first six weeks. That approach could not be sustained for a variety of reasons, including tax and budget issues. When the gift card incentive was discontinued, however, participation dropped to 38%. A \$200 wellness credit was introduced in 2009 that could be applied toward the health insurance premium or deposited into an FSA. Pelletier emphasizes, "We know the value of financial incentives, but we balance them with personal success stories to build greater awareness of intrinsic rewards."

Using the Outcomes

HealthMedia provides periodic reports of the Succeed HRA findings that describe the unique constellation of Baystate employees' health risks and conditions. These reports indicate the prevalence of various risk factors and chronic diseases to generate an "excess productivity impairment" factor, which reflects the

amount of productivity that a low-risk individual can be expected to lose. By subtracting the excess productivity impairment from the impaired productivity level of higher-risk participants, the amount of avoidable lost productivity through lifestyle change is calculated.

OptumHealth, Baystate’s data warehouse vendor, integrates the HealthMedia productivity and health risk data within a broader information set, including employee demographics, program participation, group health costs, drug costs, Family and Medical Leave Act (FMLA) and workers’ compensation. This robust reporting provides the level of detail necessary for program planning and evaluation purposes, including:

- Understanding the health risk profile of Baystate’s workforce
- Quantifying the medical and productivity cost burden associated with individual risk factors and risk cohorts (low-, medium- and high-risk)
- Estimating productivity cost avoidance opportunities
- Tracking changes in health status with productivity costs
- Making well-informed decisions to enhance the Baystate Healthy program

Select Health and Productivity Findings

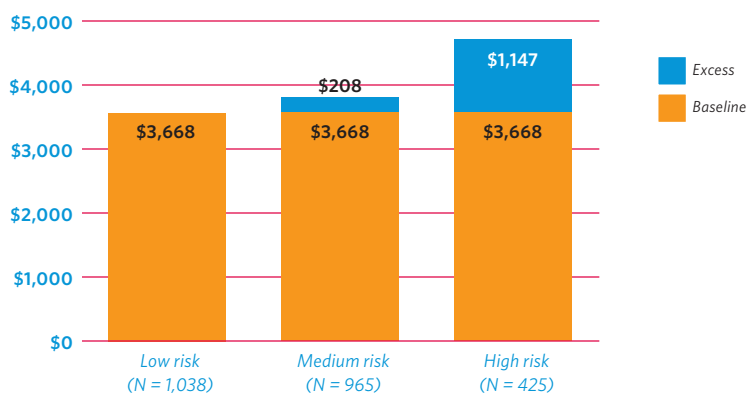
The following findings from the OptumHealth integrated report highlight the overall magnitude of productivity loss experienced by Baystate employees as well as the strong correlation between health risks and lost productivity.

Finding #1: The cost of excess presenteeism is much higher than excess medical and prescription costs.

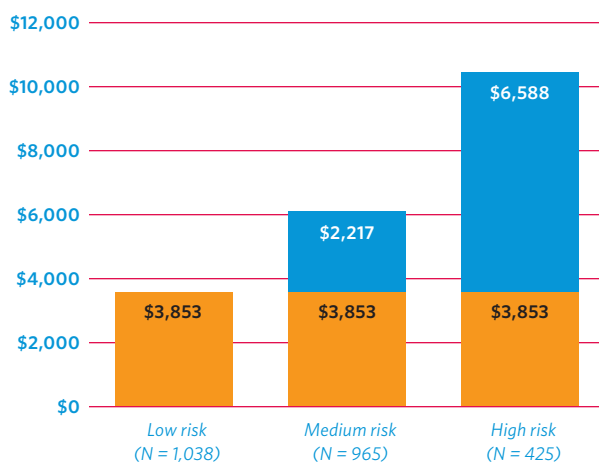
- Excess costs are defined as those costs associated with medium- and high-risk individuals over and above the costs associated with low-risk status.
- Summing medium- and high-severity risks, 7.2% of total excess medical and prescription costs based on actual claims paid are associated with modifiable health risks (\$690,000 for 2,428 individuals), per the graph at the upper right.
- 34.6% of total presenteeism costs are associated with excess modifiable health risks (\$4.9 million for 2,428 individuals), per the graph at the lower right.

COMPARISON BETWEEN EXCESS 2010 MEDICAL/PRESCRIPTION AND PRESENTEEISM COSTS Of 2,428 active HRA participants with medical enrollment

7.2% EXCESS MEDICAL/PRESCRIPTION COSTS FOR EMPLOYEES AT MEDIUM AND HIGH RISK



34.6% EXCESS PRESENTEEISM FOR EMPLOYEES AT MEDIUM AND HIGH RISK



- This calculation provides a theoretical estimate of potential cost savings. Assuming that every medium- and high-risk employee was reduced to low risk, \$690,000 in medical and drug costs could be saved, and \$4.9 million in productivity gains could be realized. The ratio of potential productivity gains versus medical/prescription gains is 7:1.

Finding #2: The excess costs of lost productivity are associated with a particular set of health risk factors.

Productivity costs increase with increasing risk severity for weight, tobacco use, stress, physical inactivity, perception of health, nutrition, job satisfaction, depression, cholesterol, blood pressure and alcohol. An individual's perception of his or her health is the most costly factor. Employees at low risk cost less than \$6,000 per year, whereas high-risk employees cost more than \$15,500—over 2.5 times as much. Other high-cost risks are stress, job satisfaction and depression.

Finding #3: Improvement in health risk status is associated with productivity gains.

This supports an important value proposition of Baystate Healthy: Improving the health of employees can result in a more productive workforce.

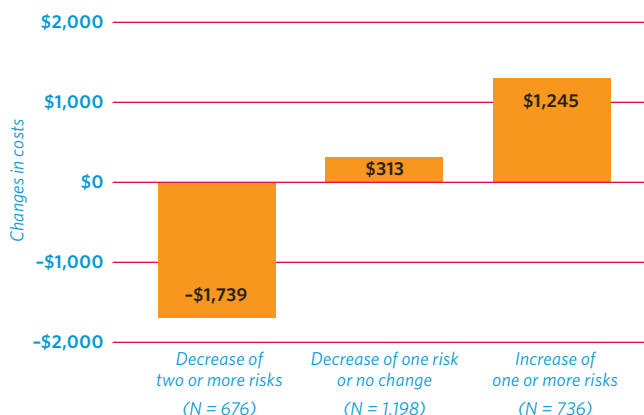
- Changes in lost productivity follow an expected pattern as the number of health risks changes, per the graph at the upper right.
- When the number of health risks increases, productivity costs increase.
- As health risks decrease by two or more, the cost of lost productivity decreases.

Signs of Success and Recommendations

Baystate completes an analysis of data annually to evaluate progress of the Baystate Healthy program. Preliminary findings indicate that Baystate's continued investment in employee health is achieving success.

- High HRA participation at implementation serves as an excellent entry point into wellness programs.
- Participation in the digital health coaching program exceeds 50% for those who complete the health questionnaire.
- Risk reduction is evident for most tracked health risks.
- There is some evidence of moderated medical and drug costs associated with repeat program participation.
- Migration of repeat HRA participants from high risk to low risk yields financial impact.

REDUCING HEALTH RISKS RESULTS IN DECREASED PRODUCTIVITY LOSS COSTS
Of 2,428 active HRA participants with medical enrollment



Valuable Outcomes of Health and Productivity Measurement

- Provides essential information to support the concept of health and work
- Paints a more complete picture of employee health to help target initiatives
- Determines whether programs are effective

Productivity Finding Informs Sleep Intervention

Baystate uses the H&P data to expand program impact. For example, many Baystate employees work at night or rotate shifts, which can result in unhealthy sleep patterns or a shift work sleep disorder that produces insomnia, excessive sleepiness, difficulty concentrating and lack of energy. Baystate H&P data provided actionable information about the effects of poor sleep patterns—too much or too little sleep—as a drain on productivity: Employees who averaged six or fewer hours of sleep had a 49% increase in impaired productivity compared with those with eight hours of sleep. Surprisingly, nine or more hours of sleep also reduced productivity.

To address this issue, Pelletier's team collaborated with internal sleep experts to develop a program called *The Power of Sleep*. Employees were offered several resources, including on-site workshops led by Baystate sleep experts, self-directed materials developed by the

team, and digital health coaching provided through HealthMedia's *Overcoming Insomnia* program. Employees who completed the program could earn points toward their \$200 wellness credit.

Participants reported positive changes in sleep behaviors. For example, follow-up survey results for the 693 employee participants completing the online *Overcoming Insomnia* program indicated significant improvements:

- Average sleep time increased by 28 minutes.
- 18% of participants reported a reduction in fatigue level.
- Self-reported productivity improved 4.27%.

Making a Health and Productivity Approach Stick

At Baystate, communicating the link between employee health and the company's mission is critical. "Living healthier lives gives us energy and vitality to serve our customers every day with quality and compassion" is a message emphasized during new-hire orientation and throughout company communications.

Baystate Healthy helps employees thrive in uncertain times. To link employee health and productivity to the business environment, the Health, Wellness

The Health, Wellness and Work/Life team continues to reinforce that health is a business imperative, not just the right thing to do.

and Work/Life team regularly communicates to leadership that the most valuable assets for managing change are employee health, fitness and resiliency. The team continues

to reinforce that health is a business imperative, not just the right thing to do.

The culture at Baystate is people-focused. While data are essential, the numbers don't tell the whole story. Leaders respond to personal testimonials and employee success stories, which are the bedrock of Baystate Healthy's communication strategy. Pelletier uses a quote from Albert Einstein to make that point: "Not everything that counts can be counted, and not everything that can be counted counts."

Baystate Health

Lessons Learned

- Think hard about the information that will be most valuable for your business. Select a measurement tool that will provide that specific information.
- Don't get wrapped up in trying to get too much detail. The magnitude-of-scale information that many instruments provide is often adequate for most management purposes.
- Communicate clearly the value of your programs and the importance of improving employee health. For Baystate, that value proposition ties to vitality to care for others with quality and compassion as well as personal quality of life and work/life balance.
- Finally and most importantly, keep it simple! Don't overengineer the solution or overstate the value. Better to underpromise and overdeliver.

CASE 4: CATERPILLAR

Gaining Traction for Self-Reported H&P Measures in a Culture That Strongly Values Objective Measurement

Synopsis

Nine years ago, the medical group at Caterpillar began exploring the connection between employee health and productivity. For years, Caterpillar had worked at getting medical costs under control. Its track record was excellent: Cost trend consistently remained below the industry average. The timing seemed right to broaden the company’s focus from medical costs to the total cost of poor employee health. Unfortunately, however, the global meltdown slowed Caterpillar’s progress, as cost-cutting was essential to weathering the economic storm. Additionally, the company’s strong reliance on objective data posed a challenge for self-reported productivity measurement. But with the economy improving and armed with results from a unique self-report methodology developed by Healthways, Inc., Caterpillar’s Corporate Medical department is on track with its health and productivity initiative.

Company Overview

Caterpillar is the world’s largest manufacturer of heavy earth-moving equipment. Headquartered in Peoria, Illinois, Caterpillar builds products for the mining, forestry and rail industries, including off-road engines and truck engines. (For more information about the company, visit www.caterpillar.com.)

Caterpillar employs 110,000 workers worldwide, with 38,000 in the United States. The workforce is 74% male and 26% female, with approximately 25% union represented. The workforce is older; almost half are between the ages of 45 and 64; the average age is 41. Caterpillar’s total annual spending on healthcare is \$650 million. Nearly all employees are self-insured in either an HMO or a preferred-provider organization (PPO).

Measurement Background

Caterpillar has worked diligently over the past decade to get medical and pharmacy costs under control. According to Michael Taylor, MD, Caterpillar’s Medical Director for Health Promotion, “We are trying to understand and manage all of the levers in the cost equation.” The company’s cost trend for the past eight years is less than 1% (the industry average is 13%). As a collaborative effort between Caterpillar’s Corporate Medical department and its Benefits group, the team felt it was time to broaden the conversation from medical cost to the bigger issue of productivity.

The team sought to redirect its focus from a “traditional” benefits-oriented approach to help the company understand the total cost of poor employee health. Its mission: *To understand all facets of a person’s well-being that affect their productivity. A new measurement tool developed by Healthways and Gallup called the Well-Being*

Measurement Overview

Tool Used:
Well-Being Assessment (WBA)
(see *Self-Report Measurement Tools* for description)

Offered to:
All full-time employees in the United States

Response Rate:
53%

Incentives Offered:
None

Measurement Time Frame:
March 1–21, 2010

Responsible Party:
Michael Taylor, MD
Medical Director for Health Promotion

Assessment (WBA) emerged just as the team was embarking on this new strategy.

To put this measurement initiative into context and understand the heavy lifting required to set the stage for the WBA, we must back up a few years. The Corporate Medical group at Caterpillar began its health and productivity (H&P) journey nine years ago.

While the advantages of conducting a measurement initiative were obvious, the company first had to build some traction for an idea as new as health and productivity management.

While the advantages of conducting a measurement initiative were obvious, the company first had to build some traction for an idea as new as H&P management. The team felt it was important to have the concept and

the philosophy in place before digging into the details. Measurement is not an entry-level activity; it is confirmatory once the organization has embraced the concept.

A simple first step: The “iceberg visual” (see Aetna’s case study) was presented to senior management in 2004. The response: “That makes sense.” It was a start. But new ways of thinking take time and diligent preparation to gain traction. Senior management’s understanding of the long-term benefits of improving employee health risks was developing, and Caterpillar’s executive office fully embraced the concept.

In 2005, Caterpillar served as a pilot for a new H&P estimator called the Blueprint for Health. Comparing the estimates of productivity loss from the Blueprint with actual Caterpillar data from Medstat showed a very close and consistent relationship. This, too, was presented to senior management. Four key points emerged from that meeting:

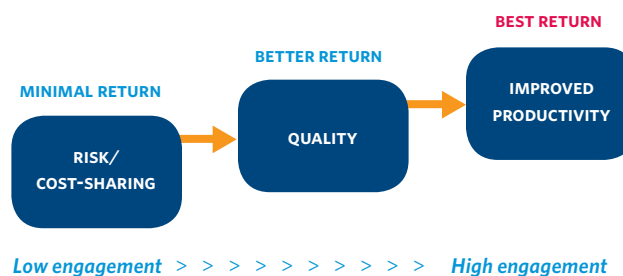
- Cost estimates are directionally correct (i.e., the data are credible).
- Senior leadership is comfortable with economic predictions and uses them to inform a variety of financial decisions.
- The lost-productivity estimates were eye-opening and too large to ignore.
- The Blueprint used a reasonable methodology that erred to conservative estimates—soft science was beginning to transition to harder numbers.

The result: Continue exploring the connection between health and productivity.

Economics, however, slowed the process: The global financial meltdown had a serious impact on Caterpillar. The lack of new construction worldwide meant that inventory was increasing and profits were shrinking. This drove focus to cost-cutting measures, hardly a time for the creation of a new approach to human capital. Equally difficult was a general bias against the self-reporting of data.

In spite of these challenges, the Corporate Medical and Benefits teams remained vigilant. They understood the importance of laying a solid foundation for this expanded perspective on worker health. Together, they shared their vision with Caterpillar’s leadership, using the simple visual below showing the value of employee health and productivity as a business advantage.

PRODUCTIVITY AS A BUSINESS ADVANTAGE



The engagement aspect was important because it tied to the one self-report initiative that is highly valued within Caterpillar: the annual employee engagement survey, which has been conducted for many years. When employee engagement scores go up, senior managers believe that translates to the bottom line.

Drivers of Self-Reported Measurement

Caterpillar’s Corporate Medical department has been conducting health risk appraisals (HRAs) every other year for the past 14 years. Participation rates are high—94% typically respond. Caterpillar’s experience and success in undertaking HRAs provided a strong foundation for expanding into a broader set of health issues.

In 2009, Healthways had completed development of a new self-report survey called the Well-Being Assessment. Healthways developed an employer-based version aimed at assessing a wide range of

workforce issues driving individual well-being and incorporating productivity as a measure, and was looking for interested employers.

Healthways had a solid reputation as a leader in health risk and chronic-disease management. Most importantly, the WBA was not simply an expanded

The WBA could provide Corporate Medical with insights into these interconnected factors and put employee health into a broader context that included engagement and productivity.

HRA. It focused on six defined areas of well-being: life evaluation, emotional health, physical health, healthy behavior, work environment and basic access to health resources. The WBA could provide Corporate

Medical with insights into these interconnected factors and put employee health into a broader context that included engagement and productivity.

The WBA includes questions about the work environment, the employee's satisfaction with his or her job and supervisor, and perceptions of the company's concern about worker well-being. Issues of presenteeism and workplace culture are also addressed. These are combined to give an overall measure of worker productivity labeled the "Cost of Lost Value" in the model illustrated at the upper right.

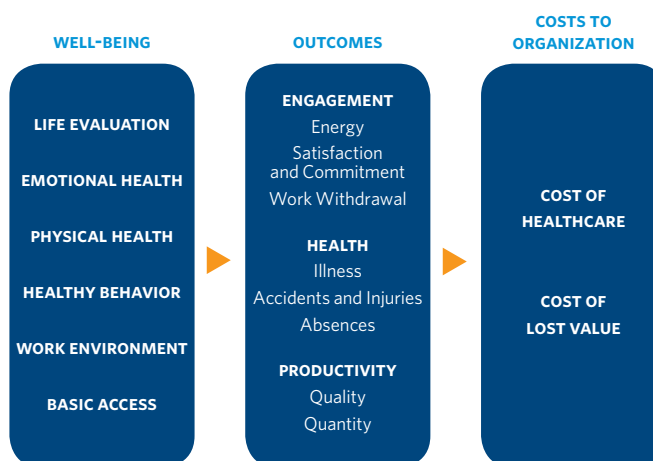
Implementing the Measurement Initiative

In February 2010, Caterpillar initiated a communications campaign as its first step. Several announcements detailed the purpose of the survey and addressed issues of data privacy and confidentiality.

The survey was offered online only. Because Caterpillar had never done anything quite like this before, management didn't know what to expect.

In fact, the early response was so positive that Healthways' servers were tested to their limit. The 52.7% response rate was considered a success, even though participation was skewed toward management because the web portal is more easily available to them than to production workers.

OUTCOMES OF WELL-BEING



Using the Outcomes

The objectives of the measurement initiative were to:

- Provide perspective on the broad range of factors that affect employee productivity.
- Compare H&P findings across business units.
- Identify H&P issues at the business unit level to drive targeted improvement initiatives.
- Tie WBA findings to employee engagement survey findings.

Healthways compiled a report addressing these objectives. Following are four outcomes that Corporate Medical found particularly useful in building its case for a strong H&P initiative.

Outcome #1: Benchmarking the well-being of Caterpillar employees against national norms

Caterpillar's overall well-being score of 68 was slightly higher than the national average of 67.9. The scores for life evaluation, work environment and basic access were also higher than the national average, whereas emotional health, physical health and healthy behavior scored slightly lower. Having these comparison benchmarks is useful, as they provide a context for how well Caterpillar is doing today.

Outcome #2: Comparing well-being with employee engagement survey scores

Comparing WBA results with the annual employee engagement survey was a means for tying an untested tool with the "tried and true." According to Dr. Taylor,

“If we could correlate WBA findings with engagement results, the potential for organizational buy-in for a health and productivity management approach would be advanced.” The outcome? The graph at the upper right shows a very strong linear relationship between engagement and overall well-being. According to Dr. Taylor, “It really didn’t matter if we were measuring healthy behavior, life evaluation or emotional health; they all lined up with higher levels of engagement.” This was an “aha” moment.

Outcome #3: Correlating well-being with productivity

The relationship between well-being and productivity is particularly relevant for two reasons. First, as the second graph at the right shows, as well-being increases, so does productivity. This was the expected direction, and the relationship is quite consistent. The unique advantage here is that the intervening variable—well-being—provides an expanded perspective on what drives individual productivity. The graph can be configured to show the relationship of each contributing factor to well-being with overall productivity; this is useful for assessing where the greatest potential exists for improving productivity.

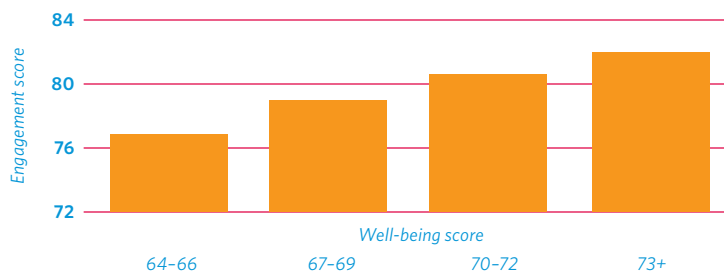
Outcome #4: Identifying key performance barriers to productivity

Personal problems and worries, physical health, depression and anxiety were found to be the most significant barriers to personal productivity. Much lower on the list are lack of resources, technology issues, workload and co-workers. In other words, productivity is limited by personal health issues to a greater extent than it is by the work environment. Addressing these health issues should have a significant influence on productivity. Fortunately, the range of health resources provided by Corporate Medical is well suited to addressing these barriers.

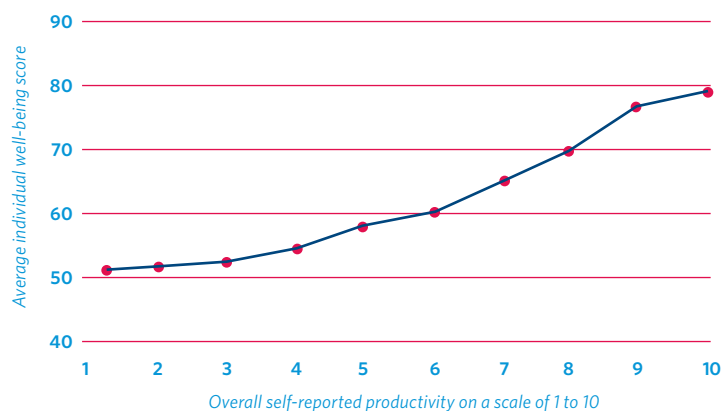
Advancing the Health and Productivity Agenda

The really critical question now is whether this measurement initiative has moved the needle toward a more comprehensive H&P focus. This is an important next step along the path. Because the findings are segmented by business unit, this makes the data much more focused and “real.”

WELL-BEING AND OVERALL ENGAGEMENT



WELL-BEING AND PRODUCTIVITY



One table in particular demonstrates the variability within the company. The graphic on the following page highlights a company-wide, business unit-by-business unit perspective on well-being. Well-being scores are segmented into five quintiles, color-coded from highest to lowest. Green and blue represent higher levels of well-being; orange and red represent lower levels. The overall well-being score ranges from a high of 73.5 to a low of 64.5 across all business units. The prevalence of orange and red cells confirms that there are many opportunities for making a difference.

It’s a powerful visual—hopefully, powerful enough to fuel continued development of a total H&P management strategy.

Making a Health and Productivity Approach Stick

The team is working creatively to generate greater senior management commitment and support. They are dealing with a number of barriers, including:

- Skepticism about self-report surveys
- A general belief that a present employee is a productive employee
- Resistance at the operations level

WELL-BEING ASSESSMENT RESULTS BY BUSINESS UNIT: Representative Business Units

Business Unit	Overall	Life Evaluation	Emotional Health	Physical Health	Healthy Behavior	Work Environment	Basic Access	Percentage at Optimal Income
Caterpillar	68.4	60.9	76.4	78.1	62.6	46.9	85.5	41.7%
BU #1	73.5	73.1	80.6	80.2	65.1	53.7	88.1	66.7%
BU #2	72.4	70.4	79.7	82.4	66.3	49.5	86.0	64.5%
BU #3	72.0	71.4	73.8	81.1	67.0	51.2	85.9	59.6%
BU #4	72.0	69.6	78.6	78.1	65.6	52.6	88.6	39.2%
BU #5	66.3	58.3	74.7	76.4	59.2	46.0	83.3	31.7%
BU #11	70.0	63.9	76.2	80.3	63.6	48.5	87.4	55.6%
BU #12	69.7	58.0	76.5	78.4	68.4	53.2	82.4	63.6%
BU #13	69.6	62.5	75.0	79.0	65.0	50.0	86.0	56.2%
BU #14	69.2	64.7	77.5	76.8	62.6	46.0	87.9	51.8%
BU #15	69.1	60.8	76.8	78.1	61.9	52.2	85.0	39.3%
BU #21	66.2	52.4	75.0	76.9	61.1	45.4	86.5	37.9%
BU #22	65.8	59.1	76.4	75.8	53.4	45.6	84.2	28.4%
BU #23	65.7	57.3	73.9	76.8	61.7	40.1	84.2	36.6%
BU #24	65.5	56.8	76.3	76.7	56.8	43.2	83.4	28.3%
BU #25	64.5	52.5	73.0	75.3	60.2	42.4	83.8	26.8%

■ Top quintile
 ■ Second quintile
 ■ Third quintile
 ■ Fourth quintile
 ■ Fifth quintile

Caterpillar

Lessons Learned

- First and foremost, you've got to have a guiding mission for what you're trying to accomplish.
- Find out what works and build on that. Because senior management did not find self-reported measures credible, the team decided to tie the WBA findings to a source that was already part of the corporate culture—the employee engagement survey.
- The concept of health and productivity needs to be put into terms that are tangible to the business units. The question to be answered from a productivity point of view: *How will a healthy worker get more product out the door?* This is the language of the operations teams.
- For Caterpillar, measurement is not an entry-level activity. The company had to build a foundation for the philosophy before getting into the details. Measurement findings are expected to be confirmatory.
- The obvious likely supporters of a measurement initiative may not buy in. You must be prepared to stretch your imagination in terms of where to find advocates.
- The productivity discussion must be specific, simple and universal. "Employees' eyes glaze over when we talk about presenteeism." But people understand a caregiver's dilemma; the need to attend to a sick child is a simple and accepted concept and is universal in nature. People understand that employees who are also caregivers may be absent or less than 100% productive.
- Sometimes the most obvious drivers just don't pan out. For instance, safety is a big issue for Caterpillar. A safety death stops production across the board for 15 minutes. But a death due to poor lifestyle doesn't capture near the attention.



CASE 5: THE DOW CHEMICAL COMPANY

Demonstrating the Value of Health and Productivity in Dow's Sustainable Development Strategy

Synopsis

"Investing in the health of Dow people is essential to the profitability and long-term sustainability of the company." This statement by Dow's executive leadership underscores the company's commitment to advancing the health component of its human-capital strategy. Andrew Liveris, Chairman and CEO of Dow, puts it this way: "We've made health a strategic priority; we've transformed our thinking and have implemented a global health strategy with prevention as one of the primary pillars." This approach aligns perfectly with one of Dow's key corporate priorities: the creation of a performance culture. This is accomplished by investing in the most cost-effective and efficient programs and services that drive improved employee health, contributing to optimal human performance.

Company Overview

The Dow Chemical Company (Dow) connects chemistry and innovation with the principles of sustainability to address problems such as the need for clean water, renewable-energy generation and increasing agricultural productivity. Dow's diversified portfolio of specialty chemical, agrosciences and plastics businesses delivers products to customers in more than 160 countries. The company's products are manufactured at more than 188 sites in 35 countries worldwide. (For more information about the company, visit www.dow.com.)

Headquartered in Midland, Michigan, Dow employs more than 50,000 workers worldwide, with 23,000 in the United States. The workforce, whose average age is 44, is 26% female and 74% male, of which 75% are full-time. Most employees (approximately 85%) are covered in a self-insured health plan; 15% are in fully insured health plans.

Measurement Background

The Dow Health Strategy (DHS) shines a laser light on the importance of optimal employee health and human performance on the long-term sustainability of the company. The DHS was endorsed in June 2004 by Dow executive leadership with the understanding that "investing in the health of Dow people is essential to the profitability and long-term sustainability of the company." The strategy is grounded on aligning incentives and keeping everyone "in the loop" with a strong communications program and is supported on four pillars: prevention, quality and effectiveness, healthcare system management and advocacy.

Dow's health and productivity (H&P) efforts have evolved over more than a decade, based on the understanding that "sustainable development is underpinned by the performance, creativity, productivity and retention of quality employees." Worker knowledge, health and satisfaction are considered primary sources of competitive advantage.

Measurement Overview

Tool Used:

Work Limitations Questionnaire (WLQ)—short form (see *Self-Report Measurement Tools* for description)

Offered to:

A statistically random sample of all global employees, including U.S. workers

Response Rates:

Average overall global response rate was greater than 60%, with all countries achieving a minimum of 55%

Incentives Offered:

None

Measurement Time Frame:

Annually beginning in 2005, then every other year beginning in 2008

Responsible Party:

Gary Billotti
Global Leader
Health and Human Performance

Gary Billotti heads up the Health Strategy Implementation team, charged with implementing policies, programs and services to improve employee health. Billotti's team keeps its focus on the link between employee health and employee performance. According to Billotti, "Years of research have shown that a worker's health often affects his or her level of productivity."

The Dow Health Strategy mission statement reflects Dow's commitment to a total health philosophy that articulates clearly the relationship between healthy employees and a healthy company: *To improve health, reduce health risks, manage health-related costs of Dow people and improve employee performance through a cross-functional approach that ensures that total health-related programs and services are established, prioritized, leveraged and implemented in the most cost-effective and efficient way.*

Andrew Liveris, Dow's Chairman and CEO, expressed the company's approach in this way: "At Dow, we've made health a strategic priority; we've transformed our thinking and have implemented a global health strategy with prevention as one of the primary pillars." The strategy ties all health-related programs together under the title *Good Health for the Whole Self*. This approach highlights the multidimensional perspective that addresses the physical, mental, emotional, social and spiritual aspects of health.

Implementing this expanded definition of health requires the contribution of a broad range of internal resources. Optimizing health and human performance

"At Dow, we've made health a strategic priority; we've transformed our thinking and have implemented a global health strategy with prevention as one of the primary pillars."

through integrated solutions meant integrating the "owners" of those resources. To accomplish this, the cross-functional Health Strategy Implementation team was created, made up of members from Dow Health Services, Human

Resources, Government Affairs and Public Affairs. The team brings a wide range of experience and capabilities including compensation and benefits, occupational health, health promotion, benefits design and communications.

THE DOW HEALTH STRATEGY

Optimal health leading to optimal human performance and long-term value for Dow



Drivers of Self-Reported Measurement

In 2002, Cathy Baase, MD, Global Director of Health Services and a pioneer on the H&P measurement frontier, began gathering data from early studies showing the relationship between poor health and reduced productivity. While there weren't many studies to cite in those early days, the few that were available had "eye-opening" outcomes—lost productivity from absence and presenteeism was estimated to be several times the cost of medical care. If these results represented even a fraction of Dow's costs, the magnitude of impact was great enough for Dr. Baase to seriously address the issue. She did. And she got senior management's blessing to explore further.

Dr. Baase knew that the "embryonic" research external to Dow was only a starting point. She would need more-compelling information addressing the H&P issues of Dow employees. The company's strong reliance on data and analytics provided the foundation to bring together leaders in the measurement field to conduct a study to measure the impact of chronic conditions on direct medical costs, absence and work performance (presenteeism). The results, published in the *Journal of Occupational and Environmental Medicine* in 2005,⁹ provided strong evidence that health and human performance were essential ingredients of Dow's sustainable development strategy.

This seminal research found that almost two-thirds of Dow's total H&P management costs were attributable to work performance impairment. Remarkably, the cost associated with such performance-based work loss (commonly called presenteeism) greatly

⁹ Collins J. et al. The assessment of chronic health conditions on work performance, absence, and total economic impact for employers. *Journal of Occupational and Environmental Medicine*. 2005;47(6):547-57.

exceeded the costs of absence and medical treatment combined, as shown in the chart to the right.

Dow's comprehensive focus on health began (and continues today) with an emphasis on health risks: reducing the number of employees at high risk levels while increasing those at low risk. Improving these controllable risk factors is intended to improve performance while better managing healthcare costs. Because these factors are central to the Dow Health Strategy, being able to measure them, benchmark against industry norms and track change over time was expected. Plus, in a culture strongly oriented to a Six Sigma philosophy, measurement is highly valued. According to Billotti, "Knowing the relationship between health and productivity is truly essential. In situations where objective data are not readily available, we rely on self-report tools."

Dow's Health Strategy Implementation team is keenly aware that the corporate culture plays a significant role in engaging employees and getting them committed to improving personal health.

A positive "culture of health" provides the environment within which people can feel confident about accessing health improvement resources in a confidential manner.

A positive "culture of health" provides the environment within which people can feel confident about accessing health improvement resources in a confidential manner.

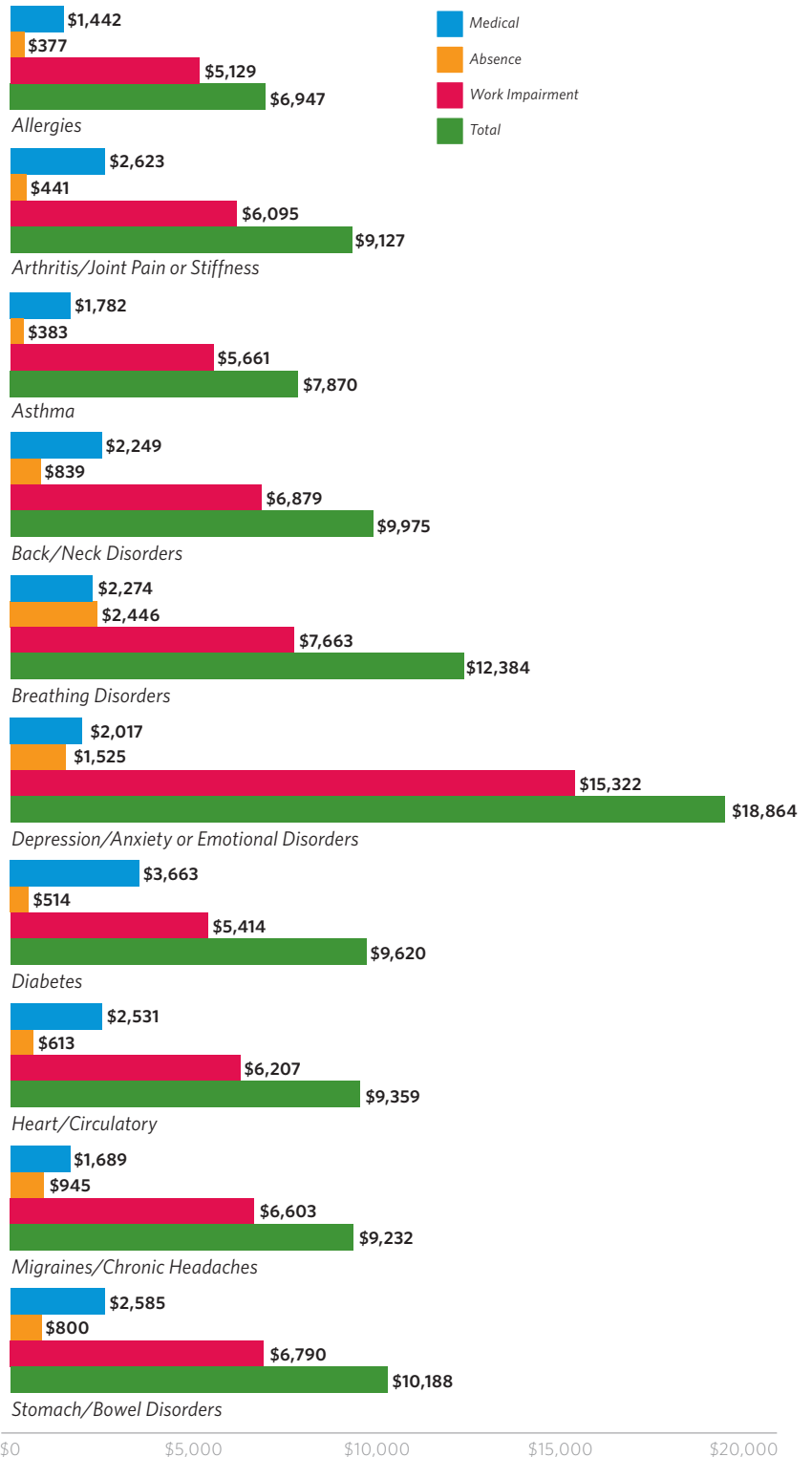
Knowing how employees perceive the culture is essential to Dow's initiatives and ultimately its success. Here too, self-reporting is the only way to find out.

Implementing the Measurement Initiative

In 2005, the Dow Global Health Questionnaire was launched. The questionnaire is designed to help Dow Health Services plan and evaluate health-related programs and services. It's an assessment developed by Dow, using a composite of validated instruments and questions.

The survey initially was administered annually but has recently changed to every other year. It includes 33 questions about various aspects of personal health. Some of the questions ask about chronic health conditions and health-related lifestyle choices. Some

AVERAGE COSTS PER EMPLOYEE BY HEALTH CONDITION AND WORKFORCE IMPACT



ask about stress. Some focus on how people feel when they are doing their daily activities. The survey includes eight questions from the short-form Work Limitations Questionnaire (WLQ) and seven questions focused on Dow's health culture.

The selection of the WLQ resulted from a rigorous examination of tools. As Billotti noted, "A decision of this importance required that we use a Six Sigma process." A set of criteria was established and a decision matrix was developed. The criteria included:

- Strong validation
- Ease of administration
- Ease of adding to other measurement initiatives
- Ability to link with other corporate data
- Short question set
- Report/output format
- Flexibility across populations
- Vendor support
- Reasonable cost

The survey is offered to a statistically random sample of Dow employees in 14 countries, including the United States. An outside company, Valtera Corporation, administers the survey electronically. Virtually all employees have Internet access, though a relatively small percentage have access to shared computers. Dow makes every effort to ensure confidentiality of the information so that employees feel comfortable sharing personal information. The questionnaire instructions clearly state: "Dow Health Services will receive summary information from Valtera Corporation but will not receive any individually identifiable information. At no time will anyone at Dow see personally identifiable individual results. Summary results will be provided in broad categories such as country, gender and age range. Plus, data will never be reported if there are fewer than 15 employees in any one category."

The response rate (without incentives) averages 60%. According to Dow's internal Epidemiology group, this response rate is considered adequate for generalizing the findings. Randomization ensures an accurate picture of the health issues in each country. The cost to survey all employees would be prohibitive, and if the survey were sent to everyone and resulted in a low return rate, the results might be biased. In addition, the team primarily needed aggregate data from which to assess needs and track program effectiveness.

Getting this level of employee buy-in requires an extensive communications process. A brief set of slides about the survey is included in safety presentations leading up to the administration date of the questionnaire. This is particularly valuable in a company where safety is held in the highest regard. Several newsletters are used to highlight the survey. The internal intranet keeps employees aware that the survey is coming. In addition, leaders throughout the organization are requested to get their managers on board and supportive of efforts to get their employees involved.

Valtera provides Dow Health Services with summary reports for each participating country. For U.S. employees, Valtera shares the response data with Thomson Reuters (formerly Medstat). The Tufts group scores the WLQ and sends the information to Thomson Reuters, which then creates and maintains a database that incorporates the WLQ information. Dow uses this robust data set to monitor and manage its healthcare costs and its health services.

Using the Outcomes

The Dow Health Strategy Annual Report provides an overview of how the health strategy is aligned to corporate priorities. Most importantly, it provides an overview of annual and cumulative achievements. Specific elements of the health strategy are directly tied to key corporate priorities:

Financial discipline—by improving the total economic impact related to the health of Dow people

Sustainability—by improving the general health, motivation and satisfaction of our employees as well as the health of people in our communities

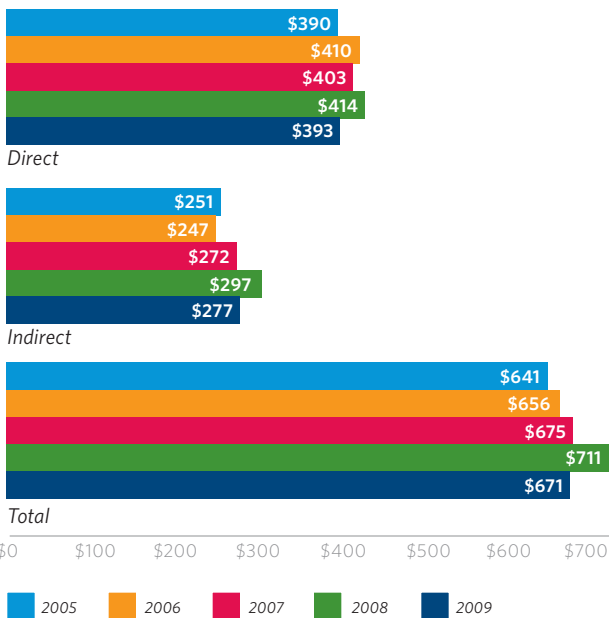
Performance culture—by investing in the most effective and efficient programs and services that drive improved employee health, contributing to optimal human performance

The annual report is firmly grounded in metrics. Productivity is one of seven key measures. The others are healthcare costs, cost trend, quality of care, health risks, healthy culture and satisfaction.

The table below provides perspective on the significant impact of health-related lost productivity from absenteeism and presenteeism in 2009. These “hidden” costs make up 41.3% of total economic impact and tally to \$277.3 million.

TOTAL COST IMPACT OF HEALTH TREND

From 2005 to 2009, in \$ millions



Tracking change over time is particularly important. It provides the basis for determining cumulative achievements and also serves as a window on how well programs and policies are working. The chart at the bottom left represents the trend of total annual costs from 2005 through 2009.

The focus on lost productivity is paying off. A key finding from 2009 was that case management in the United States alone helped save 7,266 lost workdays related to injuries and illness, amounting to almost \$3 million. Adding projected savings from improvements in presenteeism brought the total to more than \$9 million.

Billotti is quick to clarify that his team doesn’t typically translate lost productivity into monetary terms. As he says, “An understanding of the impact is the important thing, not so much the exact numbers.” The magnitude of scale is very large and gets management’s attention. Whether the number is \$200 million or \$250 million is not the issue. The magnitude of the numbers is enough to convince everyone that this is an area that must be addressed to meet corporate priorities and contribute to the long-term sustainability of the company.

Communicating Results to Senior Management

The basis for Dow’s communication campaign starts with a PowerPoint presentation and a two-page executive summary. A 25-page report provides a more detailed summary. This presentation and summary are produced annually. The 10-slide presentation highlights the mission, describes the key efforts for the year, provides key accomplishments and sets the priorities for the next year. This package informs a quarterly briefing with Billotti’s executive sponsors: the Executive Vice President and Chief Sustainability Officer and the Corporate Vice President of Human Resources, Diversity and Inclusion.

Because the Dow Health Strategy is organized in a cross-functional manner, getting “face time” with decision-makers is standard operating procedure. For instance, the VP of Environmental Health and Safety is on the Steering team, so he routinely gets updates on progress. This is particularly important because the DHS plays a critical role in helping Dow meet its Drive to Zero safety goals. The Health Strategy Implementation team works with the Safety function to provide information like prevalence of health risk factors and their impact on cost. Safety is the grandfather of health promotion at Dow and remains a powerful ally

TOTAL ECONOMIC IMPACT OF HEALTH: 2009

Breakdown of Component Costs

PRESENTEEISM	34.5%
U.S. MEDICAL PLANS—ACTIVE.....	22.7%
U.S. MEDICAL PLANS—RETIREE.....	14.1%
NON-U.S. SUPPLEMENTAL BENEFITS PLANS.....	7.4%
ABSENTEEISM	6.8%
OTHER MEDICAL PLAN COSTS	5.9%
HEALTH SERVICES (INCLUDES H&P).....	2.7%
U.S. WORKERS’ COMPENSATION.....	2.3%
NON-U.S. WORKERS’ COMPENSATION.....	1.9%
LONG-TERM DISABILITY	0.8%
INDUSTRIAL HYGIENE	0.6%
EMPLOYEE ASSISTANCE PROGRAM	0.2%
SAFETY.....	0.2%

in an environment where work-related accidents and injuries are of the highest concern. Billotti credits Dr. Baase for her work in expanding the safety focus to broader issues such as health risks and chronic conditions that are important contributors to on-the-job accidents and injuries.

According to Billotti, “We try to include some nuggets in our corporate quarterly sustainability report and in our annual shareholder reports to keep our value in the minds of company leaders. Also, creative and timely communications to let everyone know how important our efforts are help as well.”

Communicating Results to Employees

Keeping senior management informed and supportive ensures that programs continue to be funded. But maintaining progress on supporting corporate priorities is possible only when employees take action. Summary results of the Global Health Questionnaire are posted on the Health Services web page within 90 days of completion of the questionnaire. The results are presented to the Health Strategy Implementation team along with the Dow Health Services extended leadership team so that decisions can be made locally wherever unique opportunities exist for improving health.

Making a Health and Productivity Approach Stick

Billotti believes that the most important key to ensuring longevity is to make sure that H&P efforts are aligned with the goals and the objectives of the company, its businesses and its functions. The executive sponsorship of his initiatives and the cross-functional leadership approach are perfect examples. It is important that leadership understands the value that Health Services provides to employees as individuals and to the company as a whole and that health spending is viewed as an investment and not a cost, because it generates a financial return. If someone wanted to stop the effort, it would affect multiple functions and even have an impact on corporate initiatives. In other words, it would be almost impossible to cut out programs without serious consideration at the highest levels of management.

The Dow Chemical Company

Lessons Learned

- Understanding the health/productivity connection is essential in today’s competitive landscape. When objective data are not available, self-reporting is a viable way to get useful information to drive appropriate and effective actions.
- The data support and expand the value of focusing on productivity as part of the Health Services business case.
- The magnitude of the productivity opportunity gets senior management’s attention and helps gain support, uncover potential resources and “open up” budgets.
- The focus on health and productivity has helped Dow maintain a strong international reputation as a leader regarding the business value of health. One example is Dow’s contribution to a white paper on the issue of health and sustainability produced by the World Business Council for Sustainable Development.
- An international reputation adds value and integrity for Dow employees. Working to make life better on the world stage is a point of pride for Dow workers.
- Weave health and productivity into the company culture (throughout its businesses and functions) and treat spending as an investment. In such a structure, cutting programs requires consideration at the highest levels of management.

CASE 6: EASTMAN CHEMICAL COMPANY

Understanding the Total Costs of Poor Health Drives an Integrated Approach to Employee Health

Synopsis

In 2004, Eastman Chemical Company realized that the current trajectory of its healthcare costs was unsustainable. With annual increases of 15% to 20%, accompanying cost-shifting approaches weren't going to work anymore; the company needed to get at the root cause of *all* its health-related costs. Thus began a journey aimed at creating a more strategic and integrated approach around the *value* of health rather than the costs of healthcare alone. A key tenet of that approach: Quantify the *full costs* of poor health. Critical to that strategy was measurement of the effects of health problems on lost productivity.

Company Overview

Eastman Chemical Company manufactures and markets chemicals, fibers and plastics worldwide and is committed to achieving the highest standards of health, safety, and environmental and security performance. Founded in 1920 and headquartered in Kingsport, Tennessee, Eastman is a Fortune 500 company, with 2010 sales of \$5.8 billion. (For more information about the company, visit www.eastman.com.)

Eastman employs 9,500 workers, 8,200 of whom are located in the United States. The workforce is 25% female and 75% male, with an average age of 47. All employees are covered under a self-insured health plan.

Measurement Background

Eastman's new integrated perspective was entrusted to David Sensibaugh, who assumed the apt title Director of Integrated Health. According to Sensibaugh, "We have relatively low turnover—about 2%—so we have a vested interest in the health and productivity of our

population." Eastman Integrated Health (EIH) was established in 2005 to develop a total-population health approach aimed at improving the health of the company's highly stable workforce. EIH was charged with six goals:

- A healthier and more productive workforce
- Fewer absences and quicker return to work
- Greater personal responsibility for health
- More cost-effective purchase of medical care
- Lower overall cost through reducing medical, disability and related expenditures and improving workforce productivity
- Improved quality of healthcare

Under the leadership of the new Vice President of Human Resources (an engineer by training), in 2004 Eastman began its journey toward a corporate culture of health. Executive leadership was supportive of health and wellness initiatives, as were frontline supervisors in the operating areas.

Measurement Overview

Tools Used:

The full HPQ was administered in 2005 and 2006. In 2007, the productivity questions were a subset of the Work Limitations Questionnaire (WLQ). In 2008, Eastman began using a subset of the productivity questions from the HPQ. (See *Self-Report Measurement Tools* for description.)

Offered to:

All full-time and part-time employees in the United States

Response Rates:

2005: 43%
2006: 48%
2007-2010: 87%-94%

Incentives Offered:

None in 2005 and 2006. In 2007 and beyond, a \$600 annual reduction in health-care contribution was offered for completing the health risk appraisal (HRA).

Measurement Time Frame:

Some form of self-reporting annually since 2005

Current Responsible Party:

Russ Brogden
Director of Global Benefits

It was important to middle managers (directors and superintendents) to alleviate employee concern about how health data would be used by emphasizing that all health risk appraisal (HRA) data would be shared in aggregate form only. Middle managers were indispensable in helping employees understand that their job standing, promotion opportunities and cost of health benefits would not be adversely influenced by HRA results. Some middle managers were more active role models than others, and initiative was always encouraged.

Key to the success of the integrated strategy was opening everyone's eyes to the *true cost* of poor health. This meant putting direct medical costs into context with related lost productivity. A starting point was to estimate the total cost of health using health and productivity (H&P) data from external sources, such as data published by the Dow Chemical Company and the Health Enhancement Research Organization

“Looking at just the direct claims costs of specific medical conditions does not provide a true picture of the impact of poor health on lost productivity in the workforce.”

(HERO), and extrapolating what their findings meant for Eastman's population.

This approach indicated that the initiative was on the right track.

But getting a

productivity profile for Eastman's own employees was going to be essential for success. Fortunately, right about that time, the Midwest Business Group on Health offered a unique opportunity for Eastman to participate in a Centers for Disease Control and Prevention (CDC) research project known as the *Atlanta-Chicago Health and Work Performance (ACHP) Initiative*.¹⁰

The ACHP Initiative offered:

- A validated, third-party survey of employees' health-related lost time
- A report of survey results quantifying the effects of health problems on overall lost productivity
- Expert consultation to prioritize and evaluate interventions, policies and benefit plan designs
- Information sharing and advancement through an employer H&P learning program
- Assessment of the total cost of health where health claims and pharmacy data could be provided

The HPQ, developed by Ronald C. Kessler, PhD, and the World Health Organization, was the productivity measurement tool used in the ACHP Initiative. The HPQ addressed just the kinds of issues on which Eastman was focusing: personal health (chronic conditions, symptoms and medical treatment utilization) and its impact on both absence and on-the-job performance.

Drivers of Self-Reported Measurement

The ACHP Initiative was ideally suited to Eastman's measurement objectives:

- Developing its integrated management strategy
- Convincing senior management to support the integrated management strategy
- Determining the most effective areas for intervention
- Creating a baseline for measuring the impact of the integrated management strategy
- Understanding the costs of lost productivity in the context of the costs for *all* of Eastman's health-related programs

While all of these were important, the last objective was considered most essential. “Looking at just the direct claims costs of specific medical conditions does not provide a true picture of the impact of poor health on lost productivity in the workforce,” said Sensibaugh.

Senior management supported the measurement initiative, but allowing 30 to 45 minutes to complete the survey on company time would be problematic for many employees and work areas. Typically, manufacturing employees get only 20 minutes for lunch. How could Eastman get them to fill out questionnaires or participate in health-related coaching programs within that limited amount of time?

Buy-in from frontline management was essential. So what helped leaders in a manufacturing environment get on board? Sensibaugh and his team rolled up their sleeves and developed a communications process explaining why taking time to complete the questionnaire was in the best interest of the company and its employees. They approached key leadership teams of the various manufacturing divisions and sites to describe the integrated health approach and the value of understanding the degree to which poor health related to lost productivity. In turn, the division/site leaders communicated their support

¹⁰ CDC Grant Number R01DP000091: *Quantifying the Value of Value-Based Purchasing.*

of the process. Employees would be permitted to complete the questionnaire on company time if they chose to do so.

Implementing the Measurement Initiative

In October 2005, Eastman administered the HPQ to its workforce of approximately 10,400 U.S. employees. No incentives were offered. The questionnaire was administered on a secure website on company time. All employees have Internet access; for those who didn't have their own computer, stations were available in manufacturing areas, control rooms and conference rooms throughout the plants. If they wished, employees could access the company's website from home to complete the survey.

The response rate was 43%. This was acceptable for the first round of measurement and provided useful outcomes to inform the development of Eastman's integrated health strategy.

Taking Measurement to the Next Level

Key to the success of Eastman Integrated Health was increasing employees' engagement and awareness, including the importance of managing their own health. Because participation in an ongoing, self-report survey is considered foundational to that success, participation needed to increase; 43% was a good start, but Eastman desired a much higher response rate. Beginning in 2007, that was achieved by incorporating a shorter version (12 questions) of the productivity questions into the company's ongoing HRA and by offering a \$600 incentive (as a reduction in the employee's healthcare contribution) for completing the HRA, which included biometric data. Immediately, the participation rate climbed to more than 90%.

Participation rates are up, and productivity outcomes are now linked directly to the health issues affecting the workforce.

the health issues affecting the workforce. "In addition, we now ask employees to complete only one self-report questionnaire, which means less time away from the job," Sensibaugh said.

Incorporating the productivity questions into the HRA served multiple purposes: Participation rates are up, and productivity outcomes are now linked directly to

Using the Outcomes

These measurement initiatives have always had two primary purposes: to engage employees in the management of their own health and to advance the development of Eastman's integrated health strategy.

Engaging Employees

Although there are many ways to engage employees, one of the simplest and smartest ways is to let them in on the measurement results. The EIH team sent a memo to all employees (whether or not they completed the survey), conveying the following objectives and findings:

- The initiative was part of a multi-employer study by reputable organizations, including Harvard Medical School, and the study results would be used to improve health-related services provided to employees and their families.
- The objective was to determine the impact of employee health on productivity.
- No individual's data are provided to Eastman—only aggregate data. The actual survey responses are held in the strictest confidence by those conducting the study.
- Obesity, hypertension, allergy, fatigue and chronic pain caused the most absence, while obesity alone costs Eastman approximately \$4 million annually.
- As for health-related impairment on the job, fatigue, back and neck pain, depression, sleeping problems and chronic pain had the most impact on presenteeism. Presenteeism from *all* reported health conditions resulted in a total loss of \$17 million annually, or 247 FTEs.

Advancing Eastman's Integrated Health Strategy

How well did this project serve Eastman's program needs? Sensibaugh's responses to two follow-up questions suggest that it was quite successful:

> *How did you use the study results?*

"The results of the study enabled us to increase our understanding and awareness of the *full cost* of poor health," said Sensibaugh. "It enabled us to quantify the cost of lost productivity and show how interventions could impact company profitability. We estimated the annual cost of health-related lost productivity to be \$59 million annually and shared these results with senior management, various leadership teams across the company and human resource managers."

> *What specific initiatives did you implement based on these results?*

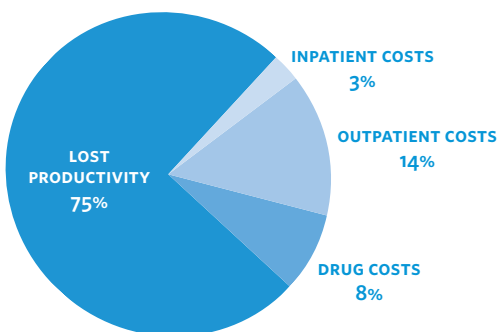
“The data from this effort showed that the productivity of our employees is significantly impacted by behavioral health issues such as depression and fatigue,” Sensibaugh reported. “We have changed health plans and are implementing an improved care management system that will integrate behavioral health more effectively with clinical solutions. The data also confirmed the need for continued focus on obesity and cardio-metabolic risk reduction.”

Digging Deeper

In 2006, Eastman partnered with the Integrated Benefits Institute, Matria Healthcare (now Alere) and the American College of Occupational and Environmental Medicine in the *Health and Productivity as a Business Strategy* project.¹¹ Using results from the long-form HPQ led to several important findings:

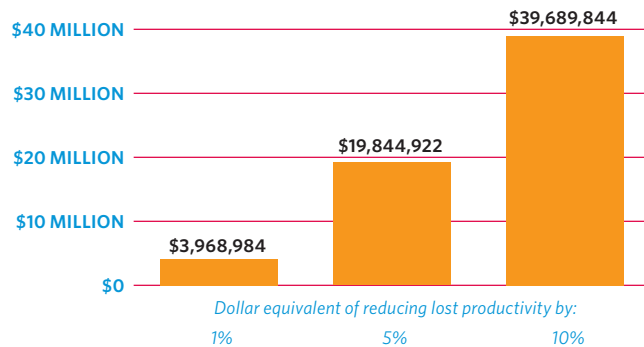
- Lost productivity is Eastman’s most significant health-related cost, accounting for more than 70% of all employee health-related costs.
- By increasing the number of employees seeking treatment for specific health conditions, many opportunities exist to improve productivity and reduce total cost. Several of the most expensive health conditions in terms of total cost have reported treatment rates of less than 30%. To manage *all* health-related costs, medical care must be linked to lost time, with both considered when allocating resources for managing health conditions. For the five most costly conditions—back/neck pain, chronic pain, arthritis, hypertension and fatigue—more than 85% of total costs relate to productivity loss.

FULL COST OF HEALTH CONDITIONS
based on 2,005 responses



- An eye-opening finding from the IBI report calculated the additional revenue that otherwise would be needed to achieve the same impact as reducing lost productivity by 1%, 5% and 10%. In Eastman’s case, it would take almost \$20 million to equal a 5% reduction in productivity loss.

REVENUE NEEDED TO EQUAL LOST-PRODUCTIVITY COSTS



Making a Health and Productivity Approach Stick

Early in the project’s development, the Eastman team recognized the importance of “staying power.” They addressed this in two ways. First, all expenditures and decision-making around health and productivity management were brought to the corporate level, with all funds spent for H&P programming budgeted at the corporate level, as were other benefits programs such as healthcare, vacation and disability. This prevents a division or operating area from arbitrarily cutting programs. Any changes are decided companywide.

The team also leveraged the company’s division-based wellness teams. These teams, each comprising 300 to 800 employees representing different job levels, function like small companies; they are encouraged to implement creative programs that will meet specific health needs within their groups. The teams operate within the context of the EIH umbrella and meet periodically to share best practices.

¹¹ Loepke R, Taitel M, Richling D, Parry T, Kessler R, Hymel P, Konicki D. Health and productivity as a business strategy. *Journal of Occupational and Environmental Medicine*. 2007;49(7): 712-21.

Eastman Chemical Company

Lessons Learned

- Don't do something just because other companies are doing it. Develop your overall HPM strategy based on *your* company's demographics, desired objectives and outcomes, and timeline for achievement.
- Management buy-in is imperative to making integrated health work.
- Tying H&P measurement to an ongoing health risk appraisal increases participation and ties productivity outcomes to health issues for program planning.
- Determine how you're going to engage employees. Eastman chose a "carrot" incentive by providing a \$600 reduction in healthcare contribution to employees who completed the HRA. That made a big difference in participation.
- A variety of external vendors are doing this kind of work. To have an effective integrated model, you must not only obtain the commitment and the involvement of your external vendors but also develop strategic partnerships with all organizations to ensure that they are aligned with your overall H&P strategy and goals.
- Include all H&P funding at corporate-level budgeting, preventing any arbitrary cutting of programs by a division or an operating group.

CASE 7: HEALTHCARE 21 BUSINESS COALITION (HC21)

Creating the Health and Productivity Value Proposition for Members of a Business Coalition on Health

Synopsis

Interest in health and productivity evolved from a pilot program that HC21 was offering to its members. Called the Chronic Care Network, it is dedicated to the management of major chronic diseases and risk factors that have a high impact on productivity. The HC21 Data Cooperative provided the data integration and analysis required to launch its health and productivity initiative, which allows employer members of all sizes to extend their analytical capabilities. It's an important step in understanding the connection between employee health and performance.

Company Overview

Located in Knoxville, Tennessee, HC21 is a multi-stakeholder, member-driven coalition, founded in 1997, with a mission to improve the quality of healthcare in east to middle Tennessee. Its mission to reduce costs, improve quality and create value is accomplished through value-based purchasing, performance measurement and consumerism. The 93 members include organizations representing local government, manufacturing, healthcare providers and human resources. Members represent 261,705 employees and more than 500,000 covered lives. (For more information about the company, visit www.hc21.org.)

Measurement Background

A member of the National Business Coalition on Health, HC21 is strongly focused on performance measurement. It is developing a strategy to bring health and productivity to its members.

HC21 promotes:

- Value-based benefits purchasing that considers price, service and quality

- Performance of healthcare and health benefits suppliers such as health plans, hospitals, physicians and brokers
- Consumer involvement in purchasing, reducing risk and, to a reasonable extent, the cost of healthcare, premised on the belief that given the right incentives and information, consumers can make value-based decisions to improve personal health

HC21's strategy is to:

- Improve the health of the community (employees, consumers and the public)
- Improve the purchasing process (by employers and employees)
- Improve the health system (health plans, hospitals and providers)

Health and productivity interest evolved from a Chronic Care Network (CCN) pilot program that the Coalition offered to its members. The CCN was established for HC21 member companies to help control the costs of major chronic diseases that have a high impact on productivity by managing the lifestyles of high-risk populations.

Measurement Overview

Tool Used:

Work Productivity and Activity Impairment Questionnaire (WPAI) (see *Self-Report Measurement Tools* for description)

Offered to:

Four employer members, with a total of 934 employees, participating in the Chronic Care Network

Response Rate: 37%

Incentives Offered:

Reduced co-pays for chronic disease management medications and supplies, free access to a health coach for face-to-face sessions, free educational materials and complimentary basic biometric measurement related to the employee's chronic disease for some employer locations

Measurement Time Frame:

Upon enrollment:
2009 to present

Responsible Party:

Gaye Fortner
Chief Operating Officer

The program relies on a strong partnership with local healthcare provider members.

The HC21 Data Cooperative (“the Cooperative”), created in 2004, provides the data integration and analysis for measuring the effect of the CCN on participants’ health and productivity. Rare among coalitions, the Cooperative is important to small and mid-sized employer members that typically can’t

Rare among coalitions, the Cooperative is important to small and mid-sized employer members that typically can’t afford such information technology on their own.

afford such information technology on their own. The Cooperative collects, stores, normalizes, analyzes and acts on members’ data to help them improve the value and the delivery of the healthcare benefits they provide for employees and

dependents. The Cooperative is essential to the CCN initiative because it allows employers of all sizes to extend their analytical capabilities, an important step in understanding the connection between employee health and workforce performance. Four full-time staff run the warehouse. Twenty employers have signed on for the data service.

Benefits of the HC21 Data Cooperative

Benefits of the Cooperative include:

- Never losing data (even when changing plans)
- Warehouse for analysis of a variety of data, including:
 - > Medical and prescription claims
 - > Biometrics and lab results
 - > Health risk appraisal (HRA) output
 - > Attendance and leave data
- Individual reporting and analysis, including:
 - > Five-year trend
 - > Benchmarking (currently 20 employers, 20 vendors and 170,000 covered lives)
 - > Clinical analysis
 - > Program/vendor evaluations
 - > Narrative summaries
 - > Recommendations related to findings, including benefits design, incentives, programs and evaluations
 - > Access to analysts for ad hoc reporting requests

■ Networking with peers about strategies that work

Coalition leaders determined that they needed to understand the connection between employee health and productivity. As Gaye Fortner, HC21’s Chief Operating Officer, puts it, “This was a natural progression based on the gaps and possibilities we could see from the data.” Members count on HC21 to research and bring forward emerging issues of importance, so health and productivity was in the Coalition’s mission sweet spot.

HC21 typically is able to build innovative approaches slowly, one success story at a time, in recognition of the differing starting places of its members. Health and productivity management (HPM) follows that pattern but is gaining traction. Fortner believes that results from this measurement initiative will accelerate adoption.

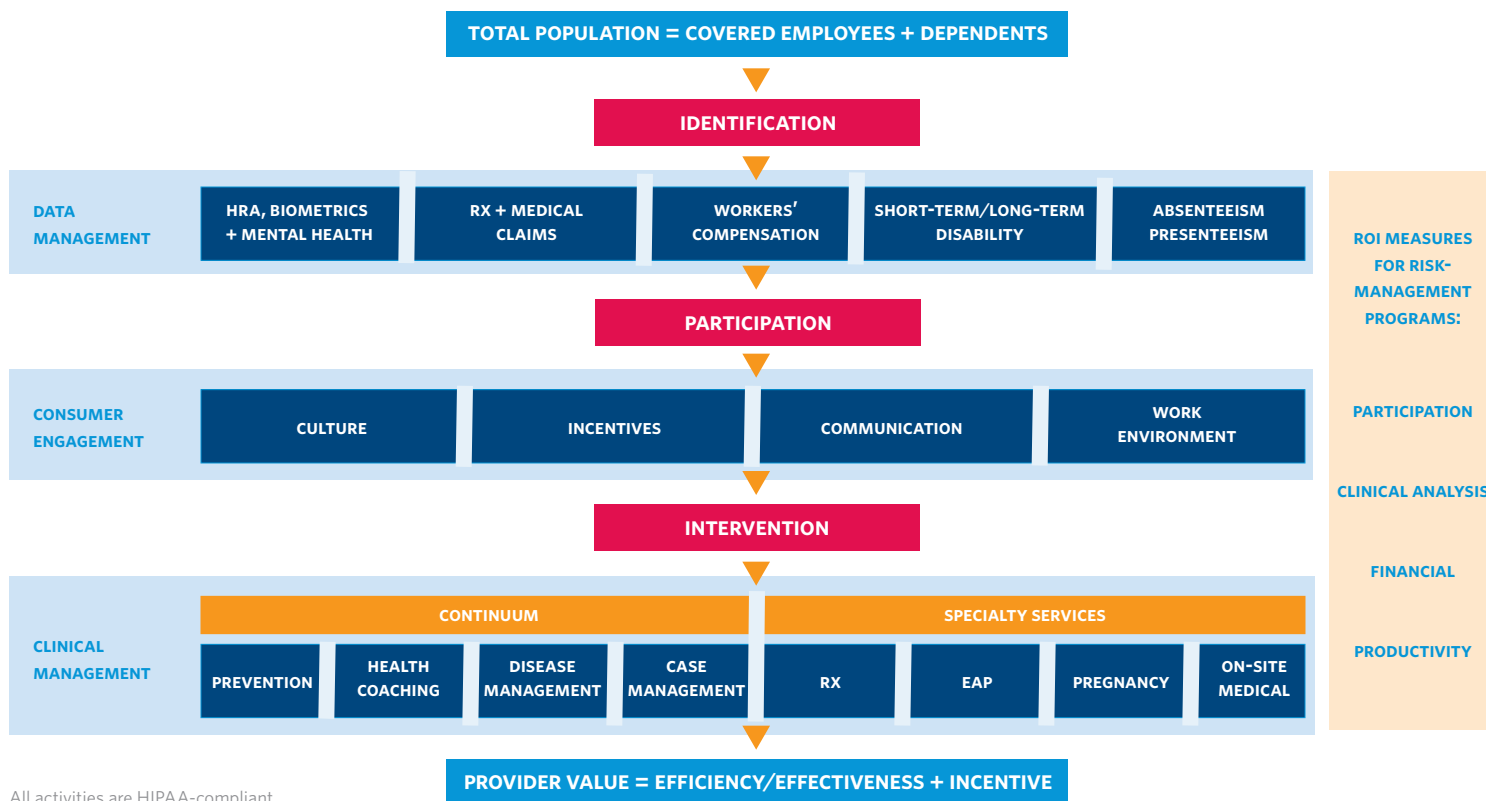
HC21’s Annual Forum is a testament to the power of HPM. Launched in 1997, the Annual Forum engages constituents in matters related to employee health and the health of their companies. It’s the largest conference of its kind in Tennessee, attracting more than 400 health and benefits professionals. In 2009, HC21 renamed the event the Annual Health and Productivity Forum. Fortner is proud to say, “We are totally committed to implementing productivity measurement.”

Medical costs still dominate the Forum’s agenda, but the new focus on productivity changes the conversation. Understanding the total cost of poor health puts the medical component in a broader perspective. Fortner believes that their members now recognize the importance of understanding the connection between health and productivity.

Drivers of Self-Reported Measurement

Fortner’s team developed a Health Risk Management (HRM) model for a holistic, total-population approach that captures the elements of workforce health that contribute to a company’s success. Illustrated on the following page, the model incorporates data management to identify at-risk individuals, consumer engagement to ensure participation, and clinical management through a continuum from prevention to on-site medical care. Productivity-related factors—including workers’ compensation, disability, absenteeism and presenteeism—are identified as equal in importance to medical and pharmacy claims and biometric measures.

HC21'S HEALTH RISK MANAGEMENT MODEL



The Cooperative collected medical and pharmacy claims information for 20 employer members of the Coalition, representing 170,000 covered lives. Leaders needed a catalyst to “move the needle.” The Chronic Care Network was the perfect opportunity.

The implementation of the CCN initiative, with its productivity measures, moved the Cooperative to another level of sophistication. As illustrated on the following page, Phase 1 focused exclusively on medical data. Phase 2 added risk factors and disease. Phase 3 added productivity to address the total cost of poor employee health.

Four member companies participate in the CCN initiative, with 37% (934) of 3,016 eligible employees participating. The value-based incentive reduces drug co-pays or increases contributions to an individual's Health Savings Account (HSA) and promotes chronic care as a free, added benefit. Each employer agrees to pay CCN a contracted rate for health coaching by trained nurses. The goal is to manage the costs for high-cost/high-risk populations and improve employee health by supporting existing doctor/patient relationships.

Components of the CCN include:

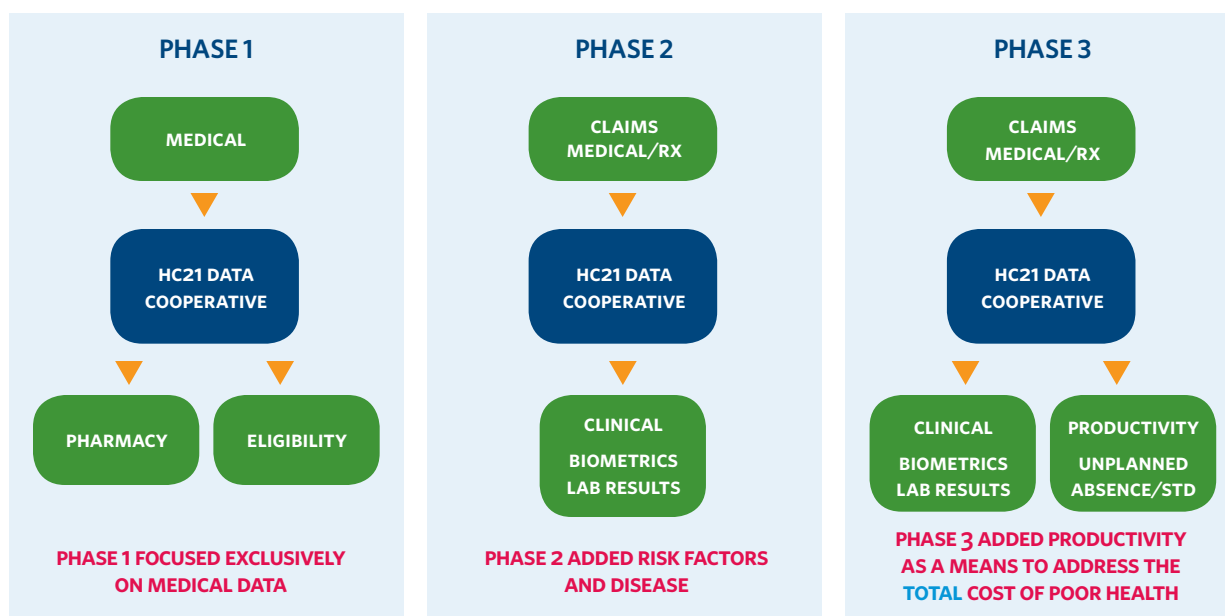
- Face-to-face health coaching convenient to home or work site for employees deemed non-compliant with chronic disease management
- A nurse at each site who uses a health-coaching and monitoring approach to provide goal setting for lifestyle changes, medication adherence counseling, educational resources and tracking of clinical results

Two objectives drive the CCN's productivity self-report component:

- Expand the potential ROI of HPM programs by integrating the cost of lost productivity within overall healthcare costs
- Provide data that support the development of HPM strategies, including enough detail to determine where it can be most effective

A valuable bonus of the program is the expansion of productivity measurement among employers not participating in the CCN. Eight employers use *Knowledge You Need (KYN)*, a one-page assessment

HC21'S TRANSITION IN ITS EMPHASIS OF THE DATA INTEGRATION PROCESS



that captures clinical values, emotional health, lifestyle risks and productivity. KYN includes two productivity questions from the WPAI. The Cooperative is analyzing these findings to provide additional evidence of value from the HRM initiative.

According to Fortner, “Senior leadership understands the need for improved health and health risk management from both a medical cost and a productivity perspective. Benefits managers are in a prime position to take the concepts of productivity management and make them a reality at the work site. With education and support from HC21, benefits managers have a better handle on their health risks and know how to take action.”

HC21 is perfectly positioned to do the heavy lifting. Members don’t have the time or resources to focus on productivity; they don’t know the right questions to ask. There is a level of trust with HC21: “When we bring our members new ideas like this, they are typically receptive,” says Fortner.

For example, an area of great interest among members is the cost of absenteeism. Jeff Townsend, as manager of the Cooperative, has been collecting absence data for several years. “Members are actually amazed that the Coalition is analyzing absence data and integrating it with their claims,” says Townsend. This means they can tie absence to claims by condition. Where available, HC21 has been able to collect

actual attendance data, including sick time, which it ties to claims and participation data. And HC21

These numbers are eye-opening. Assuming that most of the productivity costs (i.e., presenteeism) are going undetected, the potential magnitude really gets members’ attention.

can show how different conditions affect absence. According to Townsend, “We are showing members the tip of the productivity iceberg.” These numbers are eye-opening. Assuming that most of the productivity costs (i.e., presenteeism) are going undetected, the potential magnitude really gets members’ attention.

Implementing the Measurement Initiative

HC21 selected the WPAI as its productivity measurement tool. The WPAI met the four primary criteria it had established:

- Strong research validation
- Ease of administration
- Low response burden (few questions)
- Low or no cost

The Measurement Process

In July 2009, the CCN health coaches administered the WPAI in person to CCN participants as a pretest baseline. Although the face-to-face process has worked well, a small percentage of participants are still resistant to providing personal information, even to an outside third party. HC21 ensures the confidentiality of the information and assists employers with appropriate communications. Fortner indicates that, “Typically, after the first year, this issue tends to dissolve.”

The data are currently being analyzed by a third-party researcher at the University of Colorado, Denver, School of Pharmacy.

Using the Outcomes

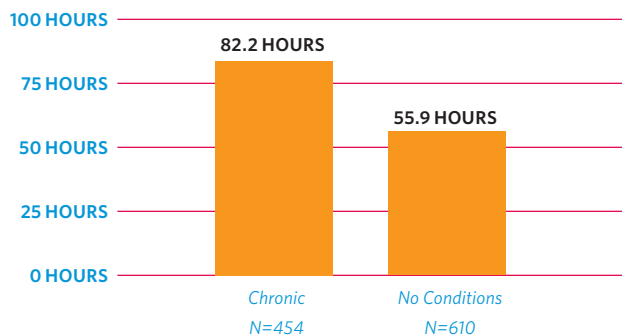
Even though results aren’t yet available, Townsend believes that the value of measurement can’t be overstated: “The more we measure, the more we learn—and the more effective we are in focusing our efforts. Without the data, we wouldn’t even be considering ‘moving the needle’ on productivity—or on healthcare costs, for that matter.”

While waiting for results from the CCN self-reported measurement, HC21 conducted a study on work loss from sick leave. According to Townsend, “We had the data and the opportunity to run analytics on the absence data we generate from employers participating in CCN.” This will provide useful absence outcomes to compare with the self-reported findings soon to be released. The study specified:

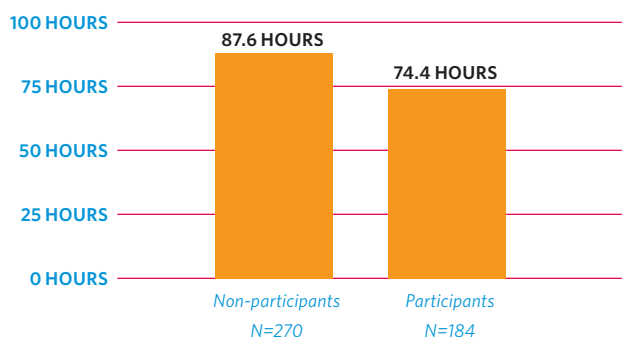
- Eligible employees must have 12 months of participation in the CCN program.
- Sick leave was the only productivity measure.
- Average hourly wage for salary conversion was \$20.63, based on information from the Bureau of Labor Statistics.

The graph at the upper right shows the variation in sick leave for those with chronic conditions versus those without. On average, employees with at least one chronic condition cost their employer 26 more hours of sick leave than their colleagues with no chronic conditions. For this group of 454 employees, that amounts to 1,496 total additional days of lost time per year, or \$246,888 in lost productivity (as measured by lost time multiplied by hourly wage) due to absence.

AVERAGE SICK LEAVE OF CHRONICALLY ILL EMPLOYEES VERSUS THOSE WITH NO CHRONIC ILLNESS



AVERAGE SICK LEAVE OF CHRONICALLY ILL PROGRAM PARTICIPANTS VERSUS NON-PARTICIPANTS



The second graph displays the differential in absence between those with at least one chronic condition who participated in the program and those who did not. Based on absenteeism alone, the program appears successful. On average, non-participants cost their employer an additional 13.2 hours per year for sick leave versus participants in the CCN program. That amounts to a total of 443 days per year, which translates to \$73,080.

The work-loss study findings have been well-received by members. They particularly value the comparison between participants and non-participants. According to Fortner, “This is valuable information that supports and informs members’ financial outlays for care management programs.”

Making a Health and Productivity Approach Stick

HC21 offers the following observations regarding providing longevity to an H&P approach:

- Senior leadership and human resources leaders must be willing to get out of their comfort zone and try new approaches. Change agents are needed at the top tier of the company.
- Companies must exhibit a willingness to make culture changes, evidenced by senior management's "walking the talk," which makes HPM stick over the long term.
- An H&P mindset has to become as important as safety, quality, cost and customer service. Tying compensation to health goals for managers and supervisors makes it real.
- The focus must be personal. Employees must feel that these programs are in their best interest.
- Emphasize that employee health is closely tied to a company's overall productivity. Many companies still perceive that personal health issues should be addressed only through the health benefits program. This perspective limits the potential to release the performance capacity of the workforce.

HC21

Lessons Learned

- Getting employers interested isn't that tough. Their main objection is not one of disbelief; it's primarily a lack of resources. Once you show employers that you can help them measure the connection between health and productivity, they get on board.
- Having a well-thought-out health risk management model provides a foundation on which well-informed decisions can be made.
- You can't just buy a measurement tool off the shelf. There is a large, additional resource required in expertise and time.
- Measurement has a strong collateral effect. The measurement process in and of itself has expanded interest in productivity among members of the Coalition not participating in the CCN.
- Adding the productivity component provides the opportunity to refine initiatives and ultimately make clinical services more robust and effective.
- Use of data collaborative resources allows employer members of all sizes to extend their scarce analytical capabilities. "The more we measure, the more we learn, and the more effective we are in focusing our efforts."

CASE 8: LINCOLN INDUSTRIES

Measuring Well-Being and Productivity with a Tool That Addresses the Company's Embedded Culture of Health

Synopsis

To say that Lincoln Industries is ahead of the curve regarding its focus on the health of its employees, the integration of all human-capital management efforts and the creation of a true culture of wellness is an understatement. Senior management is not just on board, the President is the standard-bearer. Wellness is a core component of the operational business plan, and has been for years. The impact of the approach is uncommon among companies. "It creates an intense bond of love and trust between our people and management," says the company's Wellness Director. Soft and fluffy? Not quite: The investment pays off five-fold.

Company Overview

Lincoln Industries is the nation's leading supplier of products requiring high-performance metal finishing. Based in Lincoln, Nebraska, this 58-year-old company operates 24 hours a day, seven days a week. The company serves a national customer base that includes some of the most admired companies in the world, such as Harley-Davidson, PACCAR, Tenneco Automotive, Pella and John Deere. *Great Places to Work* named Lincoln Industries a Top-25 Medium-Sized Workplace four years in a row. (For more information about the company, visit www.lincolnindustries.com.)

Lincoln Industries employs 389 workers. Its workforce is 80% male and 20% female, 97% full-time, with an average age of 38. All employees are covered in a self-insured health plan.

Measurement Background

Lincoln Industries is a true believer in the "power of its people." The company has received national recognition for its *go! Platinum* wellness program. As Tonya Vyhlidal, Director of Wellness, Safety and Life Enhancement, puts it, "We weave wellness throughout our strategic plan, business initiatives, innovation processes and people development programs." The company's business plan includes a human-capital management pillar that aims to support its people in improving their lives and, as a result, improving Lincoln's success through increased productivity and reduced healthcare costs.

Lincoln Industries launched its wellness program in 1977; it was one of the nation's first companies to recognize the role of healthy lifestyles in job satisfaction and productivity. A testament to the power of this employee-centric philosophy is that, more than three decades later, the approach is more vibrant than ever. In fact, when you view the company's website news

Measurement Overview

Tool Used:

Well-Being Assessment (WBA)
 (see *Self-Report Measurement Tools* for description)

Offered to:

All employees

Response Rate: 96%

Incentives Offered:

Completion of the assessment results in \$125 toward a \$500 individual incentive contributed to a health reimbursement account

Measurement Time frame:

Inaugurated in January 2010; repeated in September 2010

Responsible Party:

Tonya Vyhlidal
 Director of Wellness,
 Safety and Life Enhancement

page, in addition to all the usual business updates you get a healthy dose of news releases such as: “Lincoln Industries receives C. Everett Koop Award,” “Health Leadership: Be a Mountain-Climbing CEO” and “CNN Report: Wellness a Healthy Investment for Company.”

Is there a point of diminishing returns when it comes to supporting employee health? The lesson from Lincoln Industries: Not even close! Learning from its failures and building on its successes continues to pay off in terms of employee health, job satisfaction and

Learning from its failures and building on its successes continues to pay off in terms of employee health, job satisfaction and return on investment.

return on investment. The latest evolution: expanding into a total well-being philosophy with strong productivity metrics. Moving beyond the tradition of targeting health risk, illness and disease, this approach represents a more

holistic view of a person’s functioning—accounting for emotional, physical and behavioral aspects of well-being at home, at work and in the community.

Vyhlidal has managed this area since 1999. Her role has expanded from a singular focus on wellness to include occupational health, safety and benefits. One of her biggest challenges is making sure there is something for everyone. “Our people come from various walks of life and different nationalities, so we’re constantly tweaking and experimenting to find the right variety of activities and programs to support all families.”

While health programs are central to Lincoln’s human-capital strategy, whether they are viewed as successful hinges on what Vyhlidal calls “true integration”—the ability to align programs, policies and practices. In June 2010, the Benefits department was brought under Vyhlidal’s wing, which opened up all sorts of new possibilities. For instance, performance reviews incorporate a wellness component. Employees self-define their health goals annually and are rated against a Wellness Matrix (top right).

Senior managers are responsible for setting a good example, with as much as 25% of their performance review dependent on meeting their wellness goals. Directors have 10% to 15% at stake; managers and production workers, 5% to 7%. The performance reviews are tied to the profit-sharing plan, so employees also stand to gain financially for meeting their wellness objectives.

LINCOLN INDUSTRIES’ WELLNESS MATRIX

MASTERS EXPECTATIONS (5)	Formal wellness champion, committee member, leads wellness programs/initiatives, mentors others to seek improvement and provide support
EXCEEDS EXPECTATIONS (4)	Wellness champion for others, behaviors reflect an ongoing commitment to personal wellness and engaging others
MEETS EXPECTATIONS (3)	Actively participates in the company wellness program, takes personal responsibility for continuous improvement of personal wellness
CAN MEET EXPECTATIONS: DEVELOPMENT NEEDED (2)	Personal behaviors do not reflect personal accountability for wellness and there are cited inconsistencies in the support for the Lincoln Industries Wellness Initiatives
DOES NOT MEET EXPECTATIONS (1)	There is clearly no engagement in the company’s wellness initiatives and the person takes on little or no accountability for their personal wellness

Wellness Program

The *go! Platinum* wellness challenge serves as the centerpiece of Lincoln’s overall health management strategy. This points-based program provides information and encourages behavior change to prevent injury and promote health. It includes:

- Quarterly health screenings
- Annual Healthways Well-Being Assessment
- Personal coaching
- *SoundLIFE* series of behavior change programs, including *QuitNet* (tobacco cessation), *The Culprit and the Cure* (nutrition), *Weight Watchers at Work* (weight management), *LifePlan* (life enhancement), *Pro-Change* (stress management) and many others
- *Well Bucks* cash incentives

Not everyone is a candidate for these more traditional wellness activities, so there are other, unusual activities that qualify for *go! Platinum* points, such as gardening, yoga and even walking the dog. In 2007, the “Brain ‘n’ Pain Challenge” was introduced for teams participating in mental and physical challenges. Goals around work/life balance also are encouraged.

With benefits as part of her accountability, Vyhldal is finding ways to manage group health benefits to support worker health. The Healthy Lifestyle Reimbursement Program makes contributions to the employee's health reimbursement account. An individual qualifies for up to \$500 per year; \$125 for each of the following: blood profile, well-being assessment, annual physical and at least one SoundLIFE behavior management program. If the spouse qualifies, contributions can amount to \$1,000 per year. This integration of wellness incentives with the health plan helps keep healthcare costs low while encouraging better health.

Lincoln's CEO sets the stage for wellness. Hank Orme, President of Lincoln Industries, is a constant champion. He notes, "Too often, companies look at wellness as just another benefit. We have fully integrated wellness into every aspect of our company's culture. It's a source of pride and reflects how we care for one another. As a result, wellness has become a critical element of our success."

Although financial incentives are important to employee engagement, Lincoln's recognition program costs a whole lot less. Still, recognition is a core

Recognition is a core element in Lincoln's culture of health and provides a powerful incentive for wellness success.

element in Lincoln's culture of health and provides a powerful incentive for wellness success. The company provides wellness recognition for employees throughout the year, which takes many forms. A good

example is the selection of monthly wellness champions, who are recognized at the monthly champions event and in the company newsletter.

Drivers of Self-Reported Measurement

True to form, Vyhldal and her team are never satisfied with the status quo. As called for in the Six Sigma DMAIC (define, measure, analyze, improve and control) process, they are constantly measuring, analyzing and improving their approach.

For the past five years, the company relied on a "traditional" health risk appraisal (HRA). "It was time," according to Vyhldal, "to expand our approach into

more of a total well-being philosophy." This expansion would require a different kind of measurement tool.

Vyhldal needed an assessment that could provide a broader perspective on well-being: "We wanted to know how the health and well-being of our people in *all* the areas of their lives affects the overall work environment." She sought a measurement approach for a broad range of interests: identifying areas of opportunity, clarifying how personal health coincided with the health of the organization, supporting the creation of interventions or policies to broadly advance health, and evaluating outcomes.

In 2008, Vyhldal's group began researching tools that could take Lincoln's approach to these new levels. During a presentation at the Health Enhancement Research Organization (HERO), she was introduced to the Well-Being Assessment (WBA), a self-report tool developed jointly by the Gallup organization and Healthways. She immediately saw possibilities because it addressed the broad concept of overall well-being, not just health risks. The life evaluation questions and the ability to assess productivity matched the Lincoln philosophy and methodology very closely. Given Lincoln's human-capital approach, being able to address the wide range of assets employees bring to their work was an essential element of measurement.

Strong validation was a must. The WBA passed that test. The cornerstone of the WBA is the Gallup-Healthways Well-Being Index (WBI), a measurement tool developed and validated by Gallup scientists. All WBI items are included in the WBA, as well as items from well-validated productivity measures and health risk assessments. Strong vendor support also was important. Healthways, the owner and vendor of the WBA, was engaged from the very beginning. According to Vyhldal, "The relationship with Healthways has made us more effective through their creativity and collaboration."

Being able to measure the links between productivity, healthcare costs, physical health, emotional health, work environment, social support and basic access to medical resources was a "sweet spot" for Vyhldal's team. The WBA helped maximize Lincoln's health and performance investments, measure impact over time and compare Lincoln employees against national, state and citywide benchmarks.¹²

¹² Merrill RM, Aldana SG, Pope JE et al. Evaluation of a best-practice worksite wellness program in a small-employer setting using selected well-being indices. *Journal of Occupational and Environmental Medicine*. 2011; DOI:10.1097/JOM.0b013e3182143ed0

Implementing the Measurement Initiative

The WBA was offered to all employees in January 2010, replacing an HRA that had been used for five years. Working closely with Healthways, a company-wide announcement on the new approach was sent out via e-mail and company newsletter and synchronized with health screenings. In addition, the WBA was highlighted at all company meetings, departmental meetings and events.

A link to the WBA was offered to each employee through his or her individual work e-mail account. Employees could complete it either from work or from their home computers.

It was no surprise that 96% of employees completed the WBA. Employees had been using an HRA annually since 2005, so they'd become accustomed to it. Plus, its use is built into the fabric of the company and the incentive programs.

A follow-up survey was offered in September 2010. Lincoln had undergone some job cutbacks due to the economy and wanted to know the psychosocial impact this may have had on the workforce. Also, this eight-month measurement period, as opposed to 12 months, allowed for a deeper understanding of well-being changes over time and accounted for potential seasonal effects.

One might expect a lower response given the short respite between surveys, but that's not the case. People are very responsive, and they particularly value feedback from the WBA. Here's how Vyhlidal positions it: "We are constantly assessing the well-being of our company as an overall business necessity. We know that a well organization is a thriving organization."

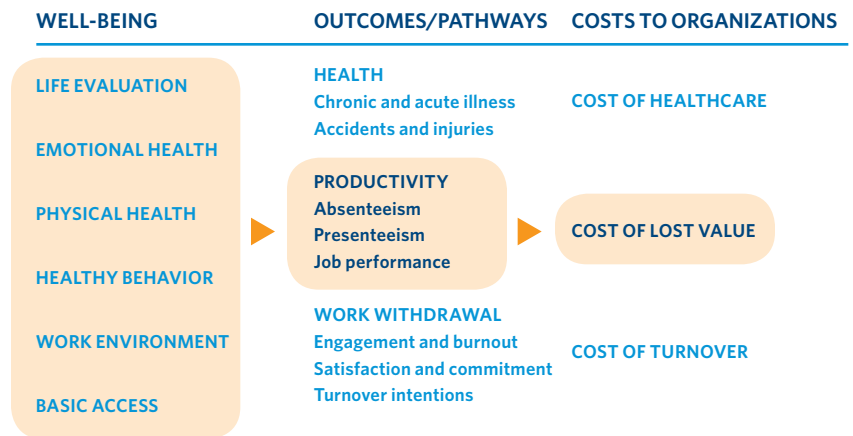
Using the Outcomes

Vyhlidal had several objectives for the WBA:

- To inform expansion of their integrated approach
- To help drive their efforts around key "psychological issues" such as emotional health, life evaluation and work environment that are perceived as essential to helping individuals make wise health decisions and perform at a high level
- To diagnose areas needing attention and to support an efficient investment of assets
- To assess Lincoln's progress against national and statewide benchmarks

WELL-BEING DRIVERS MODEL

Well-being drives outcomes and costs...

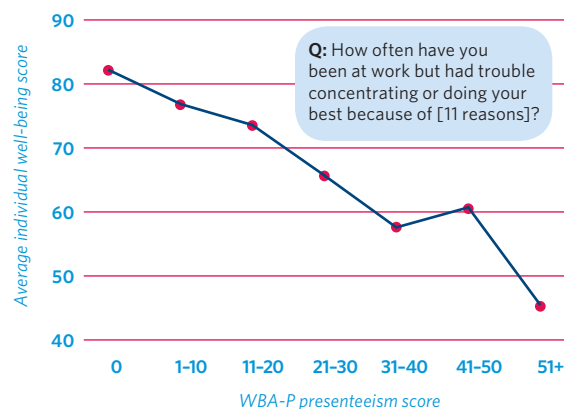


Lincoln has invested significant assets to create an environment that addresses the total well-being of its workers. Its model takes into consideration a range of factors, including emotional and physical health, life evaluation, healthy behaviors, work environment and basic access to healthcare resources.

The big question: Can we show that a healthier employee is a higher performer? The graph below illustrates encouraging results: Lincoln Industries employees experience a 24% decrease in presenteeism for every 10 points of improvement in their overall well-being. This finding supports Vyhlidal's drive to expand employee wellness from a physical health perspective to a broader concept

WELL-BEING AND WELL-BEING-RELATED PRESENTEEISM

A 10-point decrease in overall well-being scores is associated with 24% higher presenteeism



of overall well-being. When factors such as life evaluation and work environment are added to the mix, the impact on productivity multiplies. This gives Vyhldal a larger target for return on investment.

Because Lincoln Industries recently tied a wellness component to its performance evaluations, the company is particularly interested in evaluating whether health-related improvements in well-being have an impact on productivity. Early results indicate that it's working: A 10-point increase in well-being score is associated with a 4% improvement in self-reported job performance.

Benchmarking Results

How does Lincoln Industries compare with the city of Lincoln and the nation? The results are encouraging. On its composite well-being index score composed of life evaluation, emotional health, physical health, healthy behavior, work environment and basic access, Lincoln Industries rates a 72.2, compared with the national average of 69.1 and a Lincoln, Nebraska, score of 66.4. Although with its 1-to-100 scale, the well-being score is intuitive in its interpretation, the meaning of this score has more impact in context. When compared with the surrounding community, state and nation, Lincoln Industries can have a much better understanding of how well its well-being culture and initiatives are working.

Productivity Improvements Lead to Quantifiable Results

Vyhldal notes that the company's workers' compensation costs have plummeted by more than 80% since 2003. Absence rates also are encouraging: Lincoln Industries benchmarks its absence rate of 3% against a national average of 5% (estimated by the National Institute for Occupational Safety and Health). "Our ability to keep absenteeism at this low rate produces an estimated absence savings of \$411,382 annually."

Making a Health and Productivity Approach Stick

Vyhldal is bullish on how she can ensure that health and productivity will survive turnover at senior management levels and major economic downturns. The best way to make health and productivity initiatives stick is to "think that way." In other words, make health a universally accepted component of "how we do business around here." That means including it in the company's business plan, its operating plan, its

employee benefits plan, its performance and bonus plan and its medical plan.

You've also got to make it real. Usually, that requires measuring it. If you can measure it, you can attach a return on investment. At Lincoln Industries, Vyhldal is able to show a 5-to-1 return on wellness programs. Orme, Lincoln's President, is her biggest supporter. Here's what he says about her results: "We'd like to get a return like this on anything we do because that level of return is extraordinary."

Vyhldal concludes, "You also need to establish yourself as a strategic business partner. You've got to be at the table with senior management, helping make decisions and having a clear understanding of where the business is going."

Lincoln Industries

Lessons Learned

- It's not a new lesson but one that needs constant attention: You need to examine what you don't understand. Ongoing measurement is necessary for success.
- Much of a person's health status is based on factors that can be measured only using self-report tools.
- HIPAA and GINA are issues that are risky for employers, so you need to pay attention and address them directly.
- Wellness programs must be perceived as serious business, not fluffy, feel-good activities. The link to well-being, healthcare, performance and business outcomes makes the value of those programs real.
- Public recognition is a strong driver of personal health behaviors. A positive corporate culture favoring wellness creates a feedback loop: The culture begets a desire for individual recognition and esteem, which reinforces the cultural underpinnings of a healthy organization.

CASE 9: PINNACOL ASSURANCE

A Workers' Compensation Insurer Seizes a Competitive Advantage by Offering Wellness to Its Customers

Synopsis

As Colorado's leading workers' compensation carrier, Pinnacol Assurance has been successful at reducing premiums by helping customers manage the workplace issues that contribute to accidents and injuries. "But we can do more," says Jeff Tetrick, Pinnacol's Chief Financial Officer. Work-injury frequency, duration and cost have a lot to do with obesity, alcohol and smoking. As a result, Pinnacol has launched a two-pronged Health Risk Management initiative—internally for its own employees and externally for customers. The external goal: reducing workers' compensation costs and improving productivity. The internal one: healthier employees and increased productivity.

Company Overview

Pinnacol was established in 1915 as the assured source of workers' compensation coverage for Colorado companies regardless of size or risk. Approximately 55,000 companies across Colorado make Pinnacol their carrier of choice. The company is headquartered in Denver, where it employs nearly 600 workers. Its workforce is 69% female and 31% male, with an average age of 43. Ninety percent of employees who are eligible are enrolled in one of two self-insured health plans. (For more information about the company, visit www.pinnacol.com.)

Measurement Background

Pinnacol's Health Risk Management initiative started taking shape in February 2007. The Health Risk Management (HRM) program had its origin in a simple question: What can Pinnacol Assurance do to make a serious difference for our customers? Its answer: If we can decrease the prevalence or severity of health risks like obesity and smoking, we can reduce the

Measurement Overview

Internal (Employee-Based) Initiative

Tool Used:
HPQ-Select
(see *Self-Report Measurement Tools* for description)

Offered to:
All employees as part of their annual health risk appraisal

Response Rate:
2009: 54%
2010: 70%

Incentives Offered:
2009: \$50 gift card
2010: \$20 per month health premium reduction for the 2011 plan year or \$50 for employees not enrolled in the health plan

Measurement Time Frame:
Annually in November-December

Responsible Party:
Vanessa Fields
Human Resources Manager

External (Customer-Based) Initiative

Tool Used:
HPQ-Select

Offered to:
Up to 30,000 eligible employees across approximately 300-400 companies

Response Rate:
Average across participating companies: 34%

Incentives Offered:
Determined by each customer; ranges from paid time off to cash gift cards

Measurement Time Frame:
Annually over the course of the study, up to five years

Responsible Party:
Jeff Tetrick
Chief Financial Officer

frequency of our customers' accidents and their costs. We know that improvement in employee health improves productivity. This is documented by a growing body of evidence from mid-sized to large companies. But can it work for small companies? Can it work on Main Street? Will it work for a 35-employee company in Alamosa, Colorado?

To answer these questions, Tetrick needed support from his board of directors. He spent two years building the case for Health Risk Management by peppering board members with information about the business value of good health. Tetrick is proud to say, "It didn't take long for them to get it."

The HRM initiative Tetrick proposed forced all involved to think outside the box. As no other workers' compensation insurers are taking this overall health risk-reduction approach, Tetrick needed to reduce the downside risk. His solution: "We'll learn our lessons here at home by offering the same program to our employees." In

The cost of lost productivity from poor health is especially obvious to a small employer. In a workforce of 10 employees, you've got a big problem if one is absent and two others are underperforming due to health problems.

a business that competes primarily on service and price, adding a resource to improve worker health and productivity is a compelling differentiator.

Tetrick's proposal made good business sense. The board stepped up to fund a five-year study to determine whether the HRM initiative could reduce the frequency and the severity of work-related accidents and improve worker productivity by 5% to 7%.

Pinnacol customers are mainly small companies with fewer than 50 employees. They intuitively believe that employee health is linked to productivity but have limited resources, may be struggling to stay afloat and often don't offer health coverage.

The cost of lost productivity from poor health is especially obvious to a small employer. In a workforce of 10 employees, you've got a big problem if one is absent and two others are underperforming due to health problems. Pinnacol's opportunity was to shine a light on the costs of lost productivity and provide resources to manage it.

Description of the Health Risk Management Initiatives

Two Sides of the Same Coin

This case study has two components: One is the internal HRM program offered to Pinnacol employees; the other is the HRM program offered to Pinnacol customers.

Internal (Employee) Program

Launched in November 2009, the employee program included the following components:

- A comprehensive health risk appraisal (HRA), including core questions from the HPQ-Select self-report survey, offered annually
- On-site biometric screening, including a full lipid panel, fasting glucose, and height, weight and body-fat readings
- Unlimited telephonic Optimal Health Coaching™ for those who complete an HRA
- Access to online tools and interventions
- Targeted action plans
- Annual reporting on productivity and program trends
- Numerous internal support programs

External (Customer) Program

The customer program has been brought to market and agent training has been conducted. Measurement results are not yet available. Characteristics include:

- Offered to all enrolled customers (capped at 30,000 employees)
- A comprehensive HRA, including HPQ-Select core questions, offered annually for the duration of the study
- Unlimited telephonic health coaching for all employees who complete an HRA
- Unlimited use of online tools and interventions throughout the study
- Annual reporting on productivity and program trends
- Assistance in setting up work site programs and incentives
- Three- to five-year study tracking workers' compensation, health risks and productivity trends over time; the study will extend as long as five years if needed to obtain credible trend data

Pinnacol partnered with three organizations to help develop and implement both the internal and the customer-based HRM. It turned to Segue Consulting, a local health strategy consultant, to manage this new and complex venture. It turned to Trotter Wellness (TW), a national vendor of health risk appraisal and health coaching services, to deliver the program components. And it turned to the Integrated Benefits Institute, a leader in health and productivity data analytics, for the HPQ-Select productivity methodology and reporting. IBI produced an overall standard HPQ-Select report for Pinnacol and developed a methodology with TW to produce reports for Pinnacol's small-employer clients.

Inspiration, Motivation and Incentives

These are the terms Tetrick uses to get the attention of Pinnacol customers. Creating an HRM manual for agents and conducting agent training, however, were critical steps. Claire Brockbank, a principal of Segue Consulting, was tapped for that expertise. Brockbank worked with TW to put together a manual that provides comprehensive, step-by-step instructions on how to identify, communicate with, enroll and manage customers.

Pinnacol compensates agents for enrolling Pinnacol customers in the program, ensuring that eligible employees complete the HRA, and engaging employees in health coaching services.

The Buck Starts Here— Learning Their Own Lessons

Human Resources Manager Vanessa Fields had been advocating for wellness initiatives at Pinnacol for four years. Fields says she was a “lion in waiting” for the right opportunity for a serious wellness approach. Tetrick and the HRM initiative brought her that opportunity.

New Pinnacol programs typically start internally and, when proven, flow outward to customers. Here, Fields partnered with Tetrick to create a collaborative, concurrent approach to bring health risk reduction to customers and internally to employees, capitalizing on the strong corporate commitment. She wins by getting corporate buy-in to a well-organized, businesslike approach to wellness with objective research targeting areas of greatest need. Tetrick wins because Fields can assess and fine-tune the HRM program for Pinnacol's efforts on Main Street.

Tetrick values the power of customer testimonials and regularly updates agents on what they are hearing. Here are some examples:

“I was not sure what to expect from the HRM program, but I can now see how beneficial it will be for our company.”

“I have been saying for some time that we need to change our culture to make sizeable differences, and I think this is a great step in the right direction.”

“I think this is a great program—one that I am strongly encouraging my employees to participate in.”

Fields “rerouted” existing wellness offerings to coincide with the HRM program. Her biometrics program strengthened the HRA. A variety of program offerings such as on-site exercise facilities and nutrition education classes reinforce the results from biometric screenings and the HRA.

Drivers of Self-Reported Measurement

Pinnacol had several measurement challenges. It needed a self-report tool that would establish a baseline and provide information about health risks, chronic conditions and productivity. The tool had to provide valid productivity measures across a variety of industries and be easily implemented by a wide range of customers. Plus, it needed to meet the needs of the internal program that Pinnacol offered its employees. It also had to provide feedback to inform modification of the program.

Pinnacol assembled a team that included internal experts, as well as Brockbank as the development subject-matter expert, to create the program. A major task was to research the market to identify a health and productivity measurement partner. After looking at all the measurement tools available, the team decided to partner with the Integrated Benefits Institute. IBI had created the HPQ-Select, a shortened, employer-focused version of the HPQ developed by Dr. Ron Kessler at Harvard and the World Health Organization. This tool provided relevant lost-time and productivity data in employer-friendly reports with a fast turnaround on results. Also, IBI could provide comparison information for the study. This meant that research findings could stand up to a high level of rigor.

The level of research expertise that IBI brought to the table was important because the results would be relied upon to convince Pinnacol’s board, customers and agents that HRM was making a difference. IBI also is able to translate complicated research findings into business terms in employer-friendly reports.

Using self-reported measures wasn’t a challenge at Pinnacol. The company relies on a number of self-report surveys, including an annual employee satisfaction survey and a corporate culture survey. Trust is a key element for ensuring that self-reported data are accurate. According to Fields, “Some employees may think there is an ulterior motive, but that applies to only a few people.” Her advice: “Brand the initiative primarily as a helpful resource for employees. And use employee testimonials generously to generate peer-to-peer support, especially in the early stages.” For example:

- *“Taking the HRA has really opened my eyes to the need for improving my health. I appreciate my coach for reviewing my results with me and motivating me to take action.”*
- *“When I saw the phone number come up, I knew it was my health coach. It’s nice getting these calls because it keeps me accountable. I hope to have good news to report during our next call.”*

Implementing the Measurement Initiative

Internal Program

In November 2009, the Trotter Wellness HRA was offered to all Pinnacol employees. It’s a long questionnaire that includes biographical information, health history, physical activity, eating practices, substance use, mental health, safety, job satisfaction, readiness to change and health interests. Embedded in the HRA are 23 core HPQ-Select questions related to work and productivity. Pinnacol, TW and IBI worked together to integrate the HPQ-Select into the TW HRA. This required eliminating duplicate or similar questions, managing data transfers, and reworking the reporting to incorporate both health risks and productivity risks.

The wellness program was announced by e-mail as part of Pinnacol’s open enrollment. Employees were offered a \$50 cash incentive for participating in the biometric screening, completing the HRA and engaging in a minimum of one telephonic coaching session. Employees could complete the HRA on work time or at home, and biometric screenings were brought on-site for employee convenience.

External Program

The customer program was launched with an all-agent event in May 2010, followed by agent training sessions held around the state. The same TW HRA integrating the HPQ-Select was offered to Pinnacol policyholders. The first companies enrolled in the summer of 2010, with HRA participation periods in late summer and early fall. As of June 2011, 40 agencies had been trained and 216 companies had enrolled, representing more than 20,000 employees. Agents are paid an incentive; policyholders are not charged to participate in the program but are encouraged to develop their own incentives to promote employee engagement.

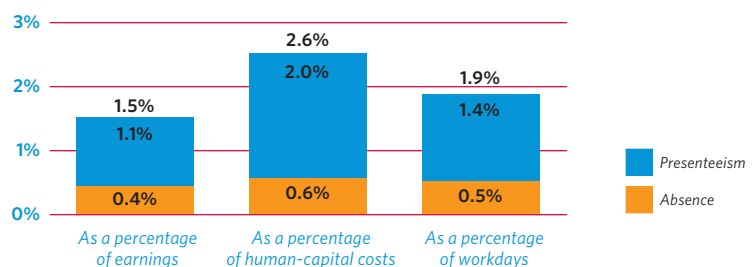
Using the Outcomes from the Internal Program

“Seeing the health risks and the lost-productivity data was eye opening.” That’s how Fields described the findings of IBI’s report, *A Broader View of Health: Results from the HPQ-Select Employee Survey*. Following are a few of the report’s key findings:

Finding #1: The magnitude of health-related lost-productivity costs is too large to ignore.

Poor health cost Pinnacol more than \$1.4 million in lost productivity in 2009, most of it (75%) from reduced employee performance on the job (presenteeism). Lost-productivity costs are equal to 1.5% of total corporate earnings. Total productivity loss amounted to 477 lost workdays per 100 FTEs, equal to 2.6% of total human-capital costs.

LOST-PRODUCTIVITY EQUIVALENTS
2009 Health-Related Lost Productivity: \$1.4 million



Sharing Successes

Tetrick distributes information on approaches customers are using to generate employee participation.

An example:

Girl Scouts of Colorado

Eligible employees:
134

Incentive: Team competition—the team with the highest participation received an additional four hours of paid time off. The agent provided an additional incentive of \$30 to each participant.

HRA participation:
98%

Finding #2: The amount of lost productivity by condition helps focus on where to spend limited resources with the greatest potential for return.

For Pinnacol, that was a no-brainer. Per the graph to the right, overweight or obese employees account for 67% of total lost productivity; those with back and neck pain account for 23%. These productivity costs are driven by high prevalence rates. Among those who completed the HRA, 46% are overweight or obese, yet only 6% are currently being treated, as shown in the second graph. Similarly, more than one in four complains of back and neck pain, yet fewer than a quarter are being treated.

Finding #3: Improvements in health-related lost productivity can represent a significant business opportunity.

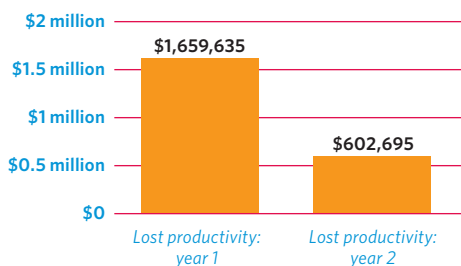
As shown in the table at the bottom right, a 10% improvement in health-related productivity would have the same earnings impact as an additional \$604,425 in revenue.

Finding #4: Health-related lost productivity declined for those who completed HRAs in two successive years.

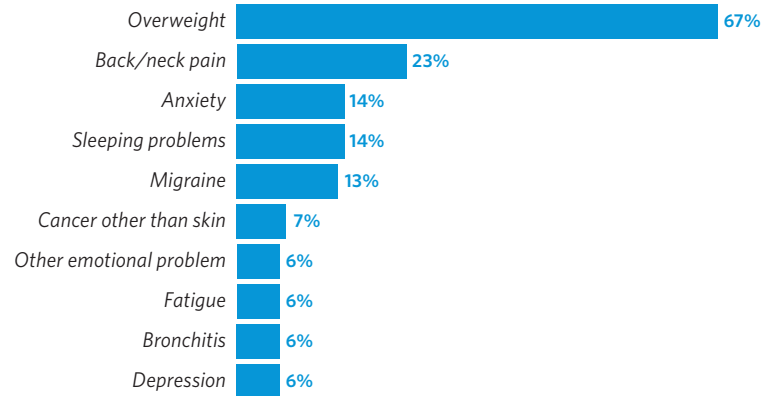
Pinnacol compared the results for employees who filled out the HRA in both years it was offered (the common sample). For these employees, health-related lost productivity decreased year to year from 13.8 days to 5.0 days per FTE. This represents more than \$1 million in productivity improvement, per the graph below.

LOST PRODUCTIVITY OF THE COMMON SAMPLE

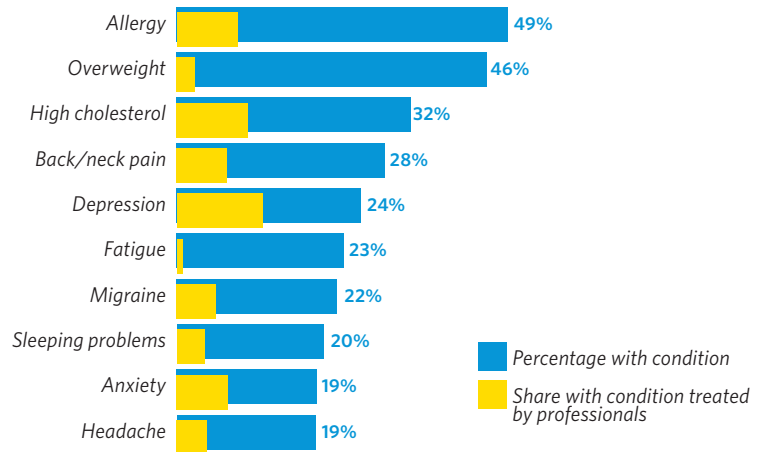
Health-related lost time dollar equivalent reported by the same employees over two consecutive years



CONTRIBUTIONS TO LOST PRODUCTIVITY BY CONDITION



PREVALENCE AND TREATMENT OF TOP 10 CONDITIONS



SAVINGS EQUIVALENTS IN KEY OPERATIONAL MEASURES

Target Productivity Improvements	Productivity Gains ¹	Equivalent Revenue Growth ²	Added Workdays ³	Human-Capital Growth ⁴
1%	\$14,136	\$60,442	29	0.03%
5%	\$70,680	\$302,212	146	0.13%
10%	\$141,360	\$604,425	291	0.26%

¹ Productivity gains are calculated as the percentage savings in total health-related lost productivity at each improvement level.
² The amount of additional gross revenue—based on the company’s gross revenue-to-earnings ratio—needed to equal productivity gains at each improvement level. Earnings are calculated before interest, taxes, depreciation and amortization (EBITDA).
³ The number of additional workdays that could be funded at each productivity savings level.
⁴ The percentage increase in human capital (wages plus benefits) that could be funded at each productivity savings level.

Informing the HRM Program

Field's team used the health risk, lost-time and productivity results to inform Pinnacol's internal program implementation for 2011. That included:

- Setting up a wellness website, including a wellness profile page
- Posting the aggregate HRA results
- Sharing 2011 HRM goals to reduce obesity, reduce the prevalence of those at risk for cholesterol and increase the number of employee participants
- Sending a PowerPoint presentation to all employees, highlighting the HRM program results
- Increasing the incentive for participation from a \$50 gift card to a monthly health plan premium reduction for the following plan year, which assisted in increasing participation from 54% to 70%.

Making a Health and Productivity Approach Stick

The most influential factor that ensures that the HRM program has staying power, according to Tetrick, is that "Pinnacol leadership moved the HRM initiative from designation as a 'project' to an operational unit of the company." That action confirms senior management buy-in and means that health and productivity is now firmly rooted in the corporate business plan.

Fields believes that program success is driven by the project owners (herself for the internal program and Tetrick for the customer-based HRM program). "Our energy creates and maintains the momentum necessary for others in our organization to follow suit." Without a central owner, it would be difficult to maintain the level of engagement necessary to result in successful coordinated initiatives.

Fields already sees the fruits of their labors. "We're just starting year two, but I can sense a change in program ownership, and that excites me. What I mean by that is that more employees and leaders are 'getting it' and are taking initiative to make grassroots wellness efforts come to fruition on personal and team levels."

Pinnacol Assurance

Lessons Learned

- Awareness is a critical first step. Employees have never had to think about health and productivity before; seeing this information gets them "warmed up." Measurement makes it real to employees and provides the foundation for success.
- The importance of solid baseline data can't be overstated. Says Fields, "I can afford to put serious effort into an initiative when I have information that helps make the case." The data confirmed that she was on the right track.
- Because Pinnacol had been fully insured, Fields couldn't get the detailed information she needed for program and policy management. Using the HRM initiative as a catalyst for change, she convinced senior management to shift to self-insured status. As of January 2010, Pinnacol is totally self-insured and, through its third-party administrator, is able to get the statistics needed to inform its programs.
- One of Field's development beliefs is that "you have to start somewhere. Don't be concerned about not having enough resources. Start small and get people on board."
- Create a support system. A wellness advisory board of people representing all parts of the company is really useful. It brings buy-in and promotes credibility.
- Roll the tape forward: Energize leadership by showing them how this will play out. Tetrick's vision: "To walk into any Colorado community and say, 'Here are the key health issues; let's work together to solve these problems.'"

Self-Report Measurement Tools

HPQ-Select and HPQ

Note: HPQ-Select is the next generation of the HPQ (Health and Work Performance Questionnaire) originally co-developed by Ronald C. Kessler, PhD, Professor of Health Care Policy, Harvard Medical School, and the World Health Organization. HPQ-Select uses a significantly shorter, more streamlined version of the HPQ. An additional, significant difference from the HPQ is in the employer-focused reporting structure and the summary information now included in HPQ-Select.

Intended Uses

- Measures prevalence, treatment status, lost time from absence and presenteeism, and lost productivity for chronic conditions as well as prevalence for acute conditions
- Assists in the establishment of a targeted business case for health investments
- Maps out a baseline against which to gauge the impact of interventions over time and clarifies the risk of doing nothing
- Measures the performance of intervention programs

Intended Users

- Employers directly for their own workforce
- Researchers working with employers on health and productivity studies
- Suppliers such as health plans, workers' compensation carriers and insurers/third-party administrators (TPAs) on behalf of employers
- Companies with previously collected HPQ data

In all cases, an HPQ-Select report can be generated for the employer and/or a dataset provided to the analyst/researcher in a manner consistent with privacy and confidentiality protections.

Current Users

HPQ-Select has a wide range of users, including health plans, TPAs, insurance carriers, employers (private and public) and researchers.

Current Applications

HPQ-Select is currently being used in a wide variety of applications, including employer-focused reporting and/or provision of datasets for health and productivity research and evaluation. Designs vary and include:

- Cross-sectional assessment at one point in time to characterize the current health and productivity status of a workforce
- Assessment of change in health-related lost time longitudinally, before and after an intervention or policy change
- Comparison of health and productivity status for multiple employers with the same health plan

Developers:

Integrated Benefits Institute
Thomas Parry, PhD, President
tparry@ibiweb.org
www.ibiweb.org/hpq-select

Ronald Kessler, PhD
Harvard Medical School
www.hcp.med.harvard.edu/hpq

Owners:

IBI and Ronald Kessler, PhD

Funder:

IBI

Versions:

- Stand-alone web-based version
- Smaller set of core items that can be integrated with an existing health risk appraisal or other self-report survey.
- Processing of previously collected HPQ data into an HPQ-Select report

Industry Relationships/Partnerships:

DataStat is the subcontractor to IBI for the web-based survey; IBI and Ron Kessler continue to have an active partnership with HPQ-Select.

HPQ-Select *continued*

Target Populations

Typically administered to the full workforce of a company. Sometimes it is administered randomly or may be used in a stratified sample for projects with a research objective.

Inclusion of Health-Related Variables

- Acute conditions such as colds and flu, sprains and strains, and broken bones
- The following 29 chronic conditions: alcohol or drug problems, allergy, anxiety, arthritis, asthma, back/neck pain, bladder/urinary, bronchitis, chronic obstructive pulmonary disease (COPD), chronic pain, congestive heart failure, coronary heart disease, depression, diabetes, fatigue, gastroesophageal reflux disease (GERD), headache, high cholesterol, hypertension, irritable bowel syndrome, migraine, nicotine dependency, osteoporosis, other cancer (not skin), other emotional problem, overweight, skin cancer, sleeping problems and ulcer (for more information, see www.ibiweb.org/hpq-survey)
- Risks, including height and weight for body mass index (BMI) calculation

Reference Points for Productivity

- For absence, HPQ-Select requests information on hours expected to work, hours typically worked and hours actually worked in the previous seven days
- For performance, HPQ-Select uses a number of different reference points, including:
 - > Usual performance of others in a similar job on a 0-10 scale (where 0 is worst performance and 10 is top performance)
 - > Individual's usual job performance on a 0-10 scale (per above)
 - > Comparison of individual's performance with other workers at a similar job on a 1-7 scale (where 1 is much worse than other workers and 7 is much better)

Data Analysis Capabilities

An HPQ-Select report is generated by IBI or by a Power User (with annual license fee for statistical analysis software [SAS] code) using the HPQ-Select survey data and a set of the following 10 employer descriptors: industry sector (mining/construction, business services, manufacturing, agriculture, retail and wholesale trade, public administration, personal services, transportation/communication, finance/insurance/real estate and other); headcount and FTEs; socio-demographic breakdown by gender, age and occupation categories; payroll; net income; gross revenue; benefits load; medical costs; pharmacy costs; and income.

Absence and presenteeism are computed and a regression analysis is conducted on chronic health conditions, including age, gender and occupation, to establish the amount of lost time (absence and presenteeism) due to chronic health conditions.

The HPQ-Select report displays total health-related lost productivity and equivalent amounts in terms of business operations and financial measures, such as equivalent work days.

Areas of Productivity Addressed:

- Absence
- Job performance, including:
 - > Overall job performance
 - > Level of concentration
 - > Level of carefulness
 - > Unable to do any work
 - > Reduced quantity of work
 - > Difficulty doing minor physical activity

Categories of Questions:

- **Your Health:** general rating, chronic conditions, injuries and acute conditions
- **Your Work:** job category, work schedule, absence, and job performance
- **Demographics:** age, gender, marital status, children, education, height/weight and income

Number of Questions:

- Full instrument: 35 (items for the same question are not counted separately; e.g., the question with 29 chronic health conditions is considered a single question with 29 items)
- When integrated with a non-overlapping HRA or other self-report questions, up to 21 questions as part of the core items; overlaps such as age and gender reduce the number of core questions required

Average Completion Time:

10 to 12 minutes

Recall Time Frame:

Varies by question but includes one year, four weeks (28 days), and seven days; the common time frame for both absence and performance is the past 28 days

HPQ-Select *continued*

Report/Output Format

For an employer's workforce, two HPQ-Select reports are produced: a three-page executive summary with six key health and productivity findings for the workforce and a 16-page detailed report with additional appendices providing the following in-depth health and productivity information:

- Prevalence, treatment status, lost time from absence and presenteeism, and lost productivity for chronic conditions
- Prevalence for acute conditions
- A target business case focused for health investments
- A baseline against which to gauge the impact of interventions over time and a clarification of the risks of doing nothing

Samples of both reports are available at www.ibiweb.org/hpq-report-details.

Scientific Information

Validation Sources

The core items used in HPQ-Select are the same items used in the HPQ. Calibration studies (available at www.hcp.med.harvard.edu/hpq) assessed the relationship between individual-level HPQ reports and archival measures of work performance and absenteeism obtained from employer archives in four occupational groups: airline reservation agents, customer service representatives, automobile company executives and railroad engineers. Good concordance is found between the HPQ and the archival measures in all four occupations.

Flexibility Across Populations

The HPQ and newer HPQ-Select have been used across a variety of industries, including the full range of equal employment opportunity (EEO) occupational categories. Detailed information about the commission job categories is available at www.eeoc.gov/employers/eo1survey/jobclassguide.cfm. The nine job categories appearing in the HPQ-Select survey are executive, administrator or senior manager; professional; technical support; sales; clerical and administrative support; service occupation; precision production and crafts workers; chemical/production operator; and laborer. These job categories can be modified to match a company's job categories while retaining the mapping to the EEO occupational categories.

Use in Research Trials

Several research projects using HPQ-Select are currently running, and the original HPQ continues to be used for research purposes.

Availability:

Three basic options are offered, with the ability to negotiate special arrangements:

- **Power Users** pay an annual license fee for the SAS program and permission to produce HPQ-Select reports
- **Partner Sponsored or Employer Direct Users** pay a per-employer fee for web-based survey administration with IBI production of employer-focused HPQ-Select reporting
- **Integrated Users** pay a per-employer fee allowing integration of items into an existing health risk appraisal or other self-report tool with IBI production of an HPQ-Select report

In all cases, data are shipped to IBI for inclusion in the HPQ/HPQ-Select research database (more information on pricing is available at www.ibiweb.org/hpq-pricing)

Availability in the Market:

Since May 2008 (the original HPQ on which the core HPQ-Select items are based has been available since 2002)

Availability of a Lost-Productivity Calculator Based on Aggregate User Data:

In addition to the lost-productivity estimates embedded in the HPQ-Select report, IBI has estimators available (absence cost estimator, chronic conditions and full-cost estimator) for computing lost-productivity costs using aggregate information (see www.ibiweb.org/alpha for more information)

Well-Being Assessment (WBA)

Intended Uses

The Well-Being Assessment was created to provide a more complete picture of well-being in a population than a traditional health risk appraisal is typically able to offer. At the core of the WBA is the Well-Being Index (WBI), created by Gallup to evaluate well-being in the community. To extend the utility of the instrument, an HRA component was incorporated to identify and measure health risk factors and chronic conditions as well as to gauge the culture of health and productivity.

The WBA offers organizations specific insight among interconnected factors such as healthcare costs, productivity, physical health, emotional health, health behavior, work environment and social support to magnify opportunities to maximize the outcomes of health and performance program investments and to measure their impact over time.

Intended Users

- Employers
- Government
- Communities
- Health plans

Current Users

More than 20 employers from various industries use the WBA, including insurance brokerages, grocery, manufacturing, health and wellness services, and consulting.

Current Applications

- Prioritization of human-capital investments
- Research:
 - > Investigating improvements in well-being as an outcome of Healthways' programs, interventions and trials
 - > Linking well-being to healthcare costs, productivity and other business metrics
 - > Aimed at better understanding the factors that trigger changes to individual well-being over time
- Total-population measurement

Many companies use HRAs to understand and improve workforce health and to guide programs to reduce healthcare costs. Research increasingly reveals vital linkages between healthcare costs, productivity, physical health, emotional health, health behavior, work environment, social support and basic access to necessary resources. The WBA offers organization-specific insight into these interconnected factors.

Target Populations

Organizations of all sizes. Healthways' primary customer base includes employers, health plans and governmental entities.

Inclusion of Health-Related Variables

- National Committee for Quality Assurance–certified HRA
- 23 chronic conditions and health risks are measured

Developers:

Gallup www.well-beingindex.com
Healthways www.well-beingindex.com

Owner:

Healthways

Funder:

Healthways

Versions:

Current version is the first

Availability:

Proprietary

Availability in the Market:

Since April 2008

Areas of Productivity Addressed:

Both absence from work (absenteeism) and on-the-job productivity loss (presenteeism). Some indicators were taken from existing validated questionnaires, including the Work Productivity and Activity Impairment Questionnaire (WPAI) and the Health and Work Performance Questionnaire (HPQ), while others were developed by Healthways. The WBA measures the following areas of productivity:

- Sickness absenteeism (Healthways)
- Physical and emotional health-related absenteeism (WPAI)
- Absolute and relative presenteeism (HPQ)
- Health-related presenteeism (WPAI)
- Well-being-related presenteeism (Healthways)

Well-being-related presenteeism is measured using Healthways' own measure, the WBA-P. The WBA-P asks employees to report the extent to which their performance has suffered as a result of 12 well-being-related barriers. These sources of productivity loss range from personal and health issues to work and social causes. The WBA-P was validated by Pro-Change against presenteeism measures from the HPQ and the WPAI.

Well-Being Assessment (WBA) *continued*

Reference Points for Productivity

- Sickness absenteeism (past year)
- Well-being-related absenteeism (past month)
- Absolute and relative presenteeism (10-point scale)
- Health-related presenteeism (10-point scale)
- Well-being-related presenteeism (3-point frequency scale for each performance barrier)

Data Analysis Capabilities

A standard aggregated report at the organizational level benchmarked to the national employee WBI data is available to all customers who complete the WBA and reach the participant levels needed to produce aggregate reporting (25 people needed per reported entity). These benchmark comparisons are computed at the item and domain levels within standard reports. Ad hoc analyses are available for regional, state and community-level comparisons.

Segmented reporting of population subgroups of interest is available to provide deeper insight into a given population. For these reports, the population can be grouped based on business unit, job class, work site and job type. Reporting is designed to be diagnostic and to reflect the levels at which change can be driven. Healthways also has the capability to do correlative and regression analyses and advanced economic analytics to determine return on investment for wellness and chronic-care management programs. Additionally, in cases where organizational outcomes data are provided, data linkage and modeling are available that can investigate ties to internal key performance indicators and individual or group-level well-being.

Report/Output Format

Aggregate reports are delivered to the organization as multipage documents that delineate overall results and that offer comparisons to national WBI benchmarks.

Each individual respondent receives a personal Well-Being Report and Plan, offering tailored feedback to improve health and well-being that reflects the individual's responses and risks. Plans fuel focused progress, guide directed use of online health resources and shape interactions with Healthways professionals as part of our well-being improvement solutions.

Additional reporting segmentation and benchmarking are available to provide more-detailed information, including site/location, business unit, job class, exempt versus nonexempt, shift level and others. Ad hoc reporting is typically delivered in PowerPoint format.

Categories of Questions:

- Life evaluation
- Emotional health
- Physical health
- Healthy behaviors
- Work environment
- Basic access
- Productivity (presenteeism and absenteeism)
- Culture of health

Number of Questions:

102

Average Completion Time:

15 to 20 minutes

Recall Time Frame:

Four weeks (28 days)

Availability of a Lost-Productivity Calculator Based on Aggregate User Data:

Commissioned by the World Economic Forum and developed by the Boston Consulting Group, Healthways' Simulation Model was used to power the Wellness App, a freely available tool that illustrates the substantial costs of chronic health conditions and their relationship to key risk factors. The Wellness App helps estimate the full cost of chronic disease within your employed population, including healthcare costs and loss of productivity, over the next five years. It also computes the potential savings from a customized wellness program targeting relevant risk factors and what the return on investment might look like. The tool is available at <http://wellness.weforum.org>.

Industry Relationships/Partnerships:

Healthways partnered with Pro-Change to develop and validate the WBA-P presenteeism measure as well as an individual-level scoring algorithm.

Well-Being Assessment (WBA) *continued*

Benchmarking Options

The WBI has provided a comprehensive view of public well-being in the United States since January 2008. The WBI tracks the well-being of U.S. residents throughout the year, interviewing no fewer than 1,000 randomly sampled adults nationwide each day, with the exception of major holidays. Interviews are conducted with respondents on landline telephones and cellular phones, with interviews conducted in Spanish for respondents who are primarily Spanish-speaking. More than 1 million responses have been collected to date.

Healthways benchmarks group-level WBA results against regional and national WBI measures. This benchmarking allows organizations to compare the well-being of their population with that of the communities in which they operate as well as national representative samples that illustrate trends in overall well-being. These benchmarks are provided at both the item and domain levels.

Scientific Information

Validation Sources

A methodology report on the WBI provides construct validity for the well-being domains. This report and additional information can be found at www.well-beingindex.com. The Healthways Center for Health Research has submitted a manuscript for peer review that demonstrates that individual well-being is related to healthcare utilization and costs among a health plan's general membership. Additionally, two manuscripts written on research by Pro-Change are currently under review: a research article documenting construct and criterion-related validity evidence for the WBA-P and an article providing reliability and validity evidence for an individual-level well-being score.

Flexibility Across Populations

The WBA was designed to be used in any population over 18 years of age.

Use in Research Trials

Pro-Change is currently using the WBA as an outcome measure in research trials testing the efficacy of various combinations of interventions. Within Healthways, the WBA is used as a benchmark and an outcome in the research and design of new interventions and programs.

Work Limitations Questionnaire (WLQ)

Intended Uses

Population assessment, program performance assessment, research and policy evaluation.

Intended Users

All healthcare stakeholders.

Current Users

- Employers
- Wellness industry
- Healthcare providers
- Policymakers
- Pharmaceutical industry
- Device industry
- Academic researchers (faculty and students)

Current Applications

The WLQ is used worldwide in pharmaceutical industry clinical trials, partly for its value in communicating information about its products to employers and managed-care markets. The WLQ is also embedded in health assessment tools that employers and insurers use to monitor the health of hundreds of thousands of employees and their dependents, and to refer them to health promotion and disease prevention programs. It is also widely used as a tool for measuring the performance of intervention programs. Finally, it is used as a framework for developing policies.

Target Populations

Currently employed adults.

Inclusion of Health-Related Variables

The WLQ does not directly include health-related questions such as those addressing chronic conditions or health risks, although the developers make available a wide range of questions that may be used in conjunction with the WLQ.

Reference Points for Productivity

The WLQ productivity loss score indicates the percentage of at-work productivity loss for a given group or individual compared with a benchmark sample of healthy employees. The score reflects the estimated difference in percentage of productivity between the measured group and the benchmark.

Developers:

Debra Lerner, MS, PhD

WLQ@tuftsmedicalcenter.org

Benjamin C. Amick, III, PhD

bamick@uth.tmc.edu

Owner:

Debra Lerner, MS, PhD

Senior Scientist/Director of the

Program on Health, Work

and Productivity

Institute for Clinical Research

& Health Policy Studies

Tufts Medical Center

800 Washington Street, Box 345

Boston, MA 02111

Funders:

Glaxo Wellcome, Inc.; initial funding from the Kaiser Foundation

Versions:

A 25-question original form and an 8-question short form are available for multiple modes of administration (paper-based, telephone, electronic) in at least 38 linguistic and cultural translations.

A related instrument is the WLQ Absence Module, available in both 4-item and 2-item versions, that measures full and partial days absent due to health problems or medical care.

Industry Relationships/Partnerships:

Distributed directly by developer:

WLQ@tuftsmedicalcenter.org

Availability:

Available via licensing arrangement:

WLQ@tuftsmedicalcenter.org

Availability in the Market:

Since 1998

Work Limitations Questionnaire (WLQ) *continued*

Data Analysis Capabilities

The Tufts Program on Health, Work and Productivity offers a broad range of data-analysis capabilities, including basic instrument scoring, norming, trend analysis and benchmarking utilizing statistical modeling methods. The program also designs and performs program evaluations, develops measurement tools and provides a number of WLQ-related consultation services.

Report/Output Format

The Tufts Program on Health, Work and Productivity offers both standardized and customized reports ranging from presentation of basic descriptive data to more-complex modeling and analyses.

Scientific Information

Validation Sources

The WLQ has been assessed in numerous psychometric tests performed by the instrument's developer as well as other parties and has been demonstrated to be reliable, valid and responsive to change. A lengthy bibliography of validation studies is available upon request from WLQ@tuftsmedicalcenter.org.

Flexibility Across Populations

The WLQ was developed to assess at-work performance and productivity loss in currently employed individuals. Because it was designed as a generic tool, it is accurate across various populations and settings.

Use in Research Trials

The WLQ has been used in a number of academic, government and commercially funded research trials resulting in many research publications. A lengthy bibliography of publications from those studies is available upon request from WLQ@tuftsmedicalcenter.org.

Areas of Productivity Addressed:

The WLQ measures at-work performance and productivity loss through an algorithm utilizing the four work scales described below. The WLQ absence module measures time lost due to health problems or medical care use.

Categories of Questions:

Responses are combined into four work limitation scales:

- **Time Management:** difficulty performing a job's time and scheduling demands
- **Physical Tasks:** ability to perform job tasks that involve bodily strength, movement, endurance, coordination and flexibility
- **Mental-Interpersonal Tasks:** difficulty performing cognitive job tasks and/or tasks involving the processing of sensory information and problems interacting with people on the job
- **Output Tasks:** decrements in a person's ability to meet demands for quantity, quality and timeliness of completed work.

The WLQ absence module measures full and part days missed.

Number of Questions:

- Original form: 25
- Short form: 8

Average Completion Time:

- Original form: 5 to 10 minutes
- Short form/absence module: less than 5 minutes

Recall Time Frame: Two weeks

Availability of a Lost-Productivity Calculator Based on Aggregate User Data:

Several lost-productivity calculators currently in the industry are based on WLQ data. Additionally, WLQ licensees are provided scoring materials to calculate all of the WLQ scale and lost-productivity scores. Tufts staff also offers WLQ scoring services to all clients free of charge.

Work Productivity and Activity Impairment Questionnaire (WPAI)

Intended Uses

- Created as a patient-reported quantitative assessment of the amount of absenteeism, presenteeism and daily activity impairment attributable to general health (WPAI:GH) or a specific health problem (WPAI:SHP)
- Assesses differences in productivity between groups in the change from baseline following an intervention
- Allows the computation of the attributed monetary value of lost productivity

Intended Users

- Pharmaceutical companies for clinical trials
- Employers
- Wellness programs
- Clinical management of patients
- Population surveys

Current Users

- Pharmaceutical companies that have used the WPAI in clinical studies include AstraZeneca, Novartis, Amgen, Abbott, UCB and Genentech (a complete list is available at www.reillyassociates.net/WPAI_References.html)
- Disease management companies such as HealthMedia, Inc.
- The WPAI is included in the National Health and Wellness Survey, a self-report patient database in the healthcare industry, with annual survey responses dating back to 1998 in the United States, to 2000 in Europe, and to 2008 in Asia.

Current Applications

Results of peer-reviewed publications are available at www.reillyassociates.net/WPAI_References.html.

Target Populations

- Employers
- Employees
- General population
- Patient groups

Inclusion of Health-Related Variables

The WPAI:SHP version is disease-specific; the specific condition of interest to the user is inserted into the questions.

Developer:

Reilly Associates
Margaret C. Reilly
mreilly@reillyassociates.net
www.reillyassociates.net

Owner:

Public domain

Funder:

Hoechst Marion Roussel, Inc.

Versions:

WPAI:GH (General Health) v2.0
WPAI + CIQ: AS
(Work plus Classroom Impairment Questions—Allergy Specific)
WPAI:SHP Specific Health Problem v2.0

Industry Relationships/Partnerships:

None

Availability:

Public domain with no permission requirement. Questionnaire cannot be called “the WPAI” if users make working changes or add or delete questions; can be reformatted to be made consistent with other instruments being used.

Has been translated into 105 languages; translations are available at no charge at www.reillyassociates.net/WPAI_Translations.html.

Availability in the Market:

Since 1993

Work Productivity and Activity Impairment Questionnaire (WPAI) *continued*

Reference Points for Productivity

- How much did health problems or a specific condition affect your productivity, on a 10-point scale from 0 (no effect on work) to 10 (completely prevented from working)?
- How many hours did you miss from work because of health problems or a specific condition?

Data Analysis Capabilities

Develop data analysis plan, analyze data provided, interpret results and write report.

Report/Output Format

The WPAI yields scores on four dimensions:

- 1 Absenteeism** (*work time missed*): Percentage of work time missed due to health problems or a specific condition
- 2 Presenteeism** (*reduced on-the-job effectiveness*): Percentage of impairment while working due to health problems or a specific condition
- 3 Work productivity loss** (*absenteeism plus presenteeism*): Percentage of overall work impairment due to health problems or a specific condition
- 4 Activity impairment** (*other than work*): Percentage of activity impairment due to health problems or a specific condition

Areas of Productivity Addressed:

- Absenteeism
- Presenteeism
- Daily activity impairment due to general health or a specific health problem

Categories of Questions:

Same as above

Number of Questions:

- WPAI—6
- WPAI:SHP—6
- WPAI + CIQ—9

Average Completion Time:

5 to 10 minutes

Recall Time Frame:

Past seven days

Availability of a Lost-Productivity Calculator Based on Aggregate User Data:

Not available

Scientific Information

Validation Sources

The instrument's validity and responsiveness have been tested in a number of studies, and it has been validated for use in a number of diseases, including allergic rhinitis, dermatitis, gastroesophageal reflux disease, nocturia, asthma, irritable bowel syndrome and Crohn's disease.

Flexibility Across Populations

There are no tests of the validity of the WPAI across different industries, occupations or other work classifications.

Use in Research Trials

Pharmaceutical companies that have used the WPAI in clinical studies include AstraZeneca, for gastroesophageal reflux disease and asthma; Novartis, for irritable bowel syndrome and dermatitis; Amgen, for chemotherapy; Abbott, for ankylosing spondylitis; UCB, for Crohn's disease; and Genentech, for asthma. A complete list is available at www.reillyassociates.net/WPAI_References.html.



**riedel & associates
consultants, inc.**

Riedel & Associates Consultants, Inc. (RACI) designs, develops and implements unique resources for managing the health and productivity of an organization's primary asset: its employees. Since its inception in 1996, RACI has evolved to become a leader in measuring and managing the productivity outcomes of wellness and disease prevention initiatives. RACI provides market research, product positioning and evaluation design to a range of clients, including health plans, hospitals, provider groups, professional associations, pharmaceutical companies and demand management vendors.

For more information about RACI, go to RIEDELANDASSOCIATES.COM.



**INTEGRATED
BENEFITS
INSTITUTE**

health + productivity at work

The **Integrated Benefits Institute** (IBI) is a national, not-for-profit, member-directed organization established in 1995. IBI is the health and productivity industry's premier private, not-for-profit research organization. In addition, IBI offers an unequaled suite of health and productivity measurement and benchmarking tools to fit any company's needs regardless of budget, data availability and staff resources. Each year, IBI offers scores of integrated health and productivity educational forums.

IBI's mission, program and activities are determined by its members, representing hundreds of corporate entities, more than 85% of which are employers. IBI's membership also includes consultants, insurers, healthcare providers, third-party administrators, pharmaceutical companies, disease management firms and others having an interest in health, productivity and absence/disability management.

For more information about IBI's programs and membership, go to IBIWEB.ORG.