



# The value of health and the power of prevention

Health and  
prevention

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## Abstract

**Purpose** – Health is inextricably linked to the productivity and therefore the economic viability of individuals, populations and nations. A global strategy for health enhancement would yield a multitude of benefits for humankind. The root cause of the escalating healthcare cost crisis is driven by a health crisis from a growing burden of health risks that are leading to an expanding burden of chronic illness yielding an unsustainable economic burden. This paper aims to present a general review of the business value of health and the power of prevention in addressing solutions for managing total health and productivity costs.

**Design/methodology/approach** – The paper reviews the scientific and economic business case for investing in health enhancement.

**Findings** – Highlights of employer case studies and published research demonstrate that comprehensive, integrated population health enhancement can lower health risks, reduce the burden of illness, improve productivity and lower total health-related costs. The dominant components of the solution are a substantial commitment to prevention and a culture of health rather than just more treatment and cure. In addition there needs to be a focus on the quality and effectiveness of care rather than just the quantity and efficiency of the care.

**Originality/value** – The healthcare cost conundrum can be impacted by reducing the burden of chronic illness and health risk in populations, thereby improving the health and productivity of the workforce, the health of the bottom line for engaged employers and ultimately the health of a nation's economy. Ultimately, the broader value proposition of integrated population health and productivity enhancement should drive this strategy by leveraging the value of health and the power of prevention.

**Keywords** Personal health, Public health, Employee productivity

**Paper type** General review

## Introduction

The current onslaught of people suffering in the battlefields of daily life from chronic disease, illnesses and injuries is disturbing. However, even more disheartening is that many, if not most, of those medical conditions could be avoided or significantly delayed – if only those people could turn back the hands of time and alter the millions of small but significant daily choices that led to those unintended consequences. The harsh reality is that largely, how we live dictates how we die. But just as counting the dead is not enough when considering the full cost of war, we would be better served to consider the full value of health rather than the inexorable cost of dying.

Yet, the current medical care system in the early twenty-first century remains focused on treatment and repair, with very little focus on prevention and promoting the health of people. However, the converging trends in the global marketplace, the emerging business value of health and the defining link between health and productivity are beginning to change the financial underpinnings of healthcare systems around the world. I would submit that the tectonic plates are shifting and we are on the threshold of witnessing the transformation of the delivery systems beyond being reactive/illness oriented *medical* care systems to becoming more proactive/wellness oriented *health* care systems.



In fact, these are not new revelations. In 1895, Joseph Malins wrote a poem entitled “Ambulance Down in the Valley”, and the following is an excerpt from his poetic case for prevention:

Better guide well the young than reclaim them when old,  
For the voice of true wisdom is calling.  
“To rescue the fallen is good, but 'tis best  
To prevent other people from falling.”  
Better close up the source of temptation and crime  
Than deliver from dungeon or galley;  
Better put a strong fence 'round the top of the cliff  
Than an ambulance down in the valley.

### **The impacts of poor health**

It has been said that we cannot alter the winds of change, but we can adjust our sails and use the change to our advantage. The converging trends are clear and present, and there is definitely change in the healthcare ecosystem gathering on the horizon. In fact, there is a new value proposition in the global healthcare marketplace that is emerging. That new value proposition is the business value of health (Loeppke and Hymel, 2008; Loeppke and Hymel, 2006).

Poor health and its negative impact on the productive capacity of people are links in the chain of causation for the escalating cost burden on business, industry and governments. Today's reality is that health is a performance driver. Progressive employers are showing the way to ultimately controlling healthcare costs is by investing in their most important asset – their people (or human capital) – as “corporate athletes” and improving their health and well-being (Loeppke *et al.*, 2008).

By investing in an integrated population health and productivity enhancement strategy, employers are looking to decrease their total health-related costs (medical/pharmacy costs as well as the health-related productivity costs of absenteeism and presenteeism) (Loeppke, 2008; Loeppke *et al.*, 2007; Berger *et al.*, 2003; Stewart *et al.*, 2003; Burton *et al.*, 1999; Collins *et al.*, 2005). Several studies suggest that the costs associated with employee absenteeism and presenteeism (reduced on-the-job productivity) due to poor health are on average two to three times more than the medical and pharmacy claims costs alone (Loeppke and Hymel, 2006, 2008; Loeppke *et al.*, 2003, 2007; Edington and Burton, 2003). Even a very conservative estimate of a one-to-one ratio of dollars lost on health-related productivity costs to dollars spent on medical/pharmacy costs would represent a significantly expanded value proposition and compelling reason for improving health.

In fact, a recent multi-employer study conducted by the American College of Occupational and Environmental Medicine (ACOEM) and the Integrated Benefits Institute (IBI) examined over 300,000 pharmacy claims, 120,000 medical claims and 15,000 employees' health-related productivity costs. Using the traditional view of assessing medical and drug costs alone, the study found that the top ten health conditions driving costs in the companies studied were cancer (other than skin cancer), back/neck pain, coronary heart disease, chronic pain, high cholesterol, GERD, diabetes, sleeping problems, hypertension and arthritis. However, when productivity costs were added using the Kessler HPQ employee survey instrument as a health-related productivity assessment method, the top ten health conditions driving this total cost (medical + pharmacy + presenteeism + absenteeism) shifted to musculoskeletal conditions, depression, fatigue, chronic pain, sleeping problems, high cholesterol,

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arthritis, hypertension, obesity and anxiety (see Table I). This approach offers a more tailored blueprint for action for employers wanting to manage the total costs of poor health in their workforce (Loeppke *et al.*, 2007).

Employees who have higher health risks and chronic medical conditions tend to have higher medical expenditures (Loeppke, 2008; Goetzel *et al.*, 2004; Conti and Burton, 1994; Burton *et al.*, 2003; Edington, 2001; Yen *et al.*, 2006). Furthermore, health risks and chronic health conditions negatively impact employee absenteeism and presenteeism (Loeppke and Hymel, 2008; Loeppke *et al.*, 2007; Stewart *et al.*, 2003; Burton *et al.*, 1999; Collins *et al.*, 2005; Loeppke *et al.*, 2003; Goetzel *et al.*, 1998; Burton *et al.*, 2004; Boles *et al.*, 2004; Burton *et al.*, 2006). However, most importantly, comprehensive and integrated population health enhancement programs have been shown to reduce health risks, improve productivity and lower total health-related costs (Loeppke, 2008; Edington and Burton, 2003; Burton *et al.*, 2005, 2006; Goetzel and Ozminkowski, 2008).

Therefore, the return on investment in health and productivity enhancement transcends the traditional measures of medical costs into the metrics of productivity improvement. Improving health not only controls expenses, but also protects, supports, and enhances human capital. Increasingly, business leaders are realizing that the health of the workforce is directly related to the health of the bottom line.

Individuals do not leave the impacts of their personal health risks on the doorstep when they leave for work, just as they cannot leave the impacts of their workplace exposures when they return home. Therefore, workplace health initiatives are uniquely positioned to leverage coordinated health and productivity enhancement strategies that can deal with the whole person in an integrated manner and the whole population across the entire health continuum (Loeppke, 1995).

### **The economic burden of illness and health risk**

The growing burden of illness and health risk is leading to a health crisis that dominates the cost crisis in healthcare. The only sustainable way to relieve the economic pressures of rising healthcare costs is to drain some of the manageable health risk and illness burden out of the population.

Chronic health conditions that are largely preventable are responsible for more than half of all deaths in the world and are projected to account for two-thirds of all deaths in the next 25 years (World Economic Forum, 2008). Currently in the USA, there are over 133 million people with one or more chronic conditions. Furthermore, 70 percent of all deaths as well as 75 percent of our \$2 trillion healthcare expenditures are related to chronic conditions. In fact, chronic conditions drive 96 percent of the costs in the Medicare system and 83 percent of the costs of the Medicaid system as well as being responsible for two thirds of the rise in overall healthcare costs in the USA since 1980 (Kenneth, 2008; Thorpe, 2006).

The World Health Organization estimates that one-half of the world's population is malnourished. However, the sad truth is that obesity is now equaling or surpassing hunger as the leading cause of malnourishment globally (World Economic Forum, 2008). Yet, it is estimated that 40 percent of cancer, 80 percent of heart disease and 80 percent of type 2 diabetes are preventable (Kenneth, 2008). These findings reveal a clear and present opportunity to avert the tidal wave of illness that is threatening the resources for education, infrastructure and other social concerns of industrialized as well as emerging nations throughout the world.

Our healthcare ecosystem would be well served if we would invest in a global strategy of prevention and health enhancement. Primary prevention (health

**Table I.**  
Top ten health conditions  
by cost category

|    | Medical                | Pharmacy               | Medical and pharmacy   | Productivity     | Total cost       |
|----|------------------------|------------------------|------------------------|------------------|------------------|
| 1  | Other cancer           | High cholesterol       | Other cancer           | Fatigue          | Back/neck        |
| 2  | Back/neck              | GERD                   | Back/neck              | Depression       | Depression       |
| 3  | Chronic pain           | Arthritis              | Coronary heart disease | Back/neck        | Fatigue          |
| 4  | Coronary heart disease | Diabetes               | Chronic pain           | Sleeping problem | Chronic pain     |
| 5  | Sleeping problem       | Depression             | High cholesterol       | Chronic pain     | Sleeping problem |
| 6  | High cholesterol       | Hypertension           | GERD                   | Arthritis        | High cholesterol |
| 7  | Hypertension           | Asthma                 | Diabetes               | Hypertension     | Arthritis        |
| 8  | Diabetes               | Allergy                | Sleeping Problem       | Obesity          | Hypertension     |
| 9  | Headache               | Anxiety                | Hypertension           | High cholesterol | Obesity          |
| 10 | Depression             | Coronary heart disease | Arthritis              | Anxiety          | Anxiety          |

**Source:** From Loeppke *et al.* (2007)

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promotion), secondary prevention (early detection/diagnosis) and tertiary prevention (early treatment/intervention) are good for individuals, populations, businesses and industries, governments and nations.

As the old adage says “an ounce of prevention is worth a pound of cure”. Preventive strategies that have been tested and shown to improve health and keep people working can be applied at several levels in different domains.

Health promotion, health education, lifestyle management, safety engineering, job ergonomics and organizational design, nutrition, prenatal care, immunizations and other wellness services are all *primary prevention strategies* because they help people stay healthy and productive.

Screening and early detection programs, health coaching, biometric testing and proactive work disability prevention programs are *secondary prevention strategies* because they can identify conditions earlier than they would have been by typical clinical manifestation.

Disease management, evidence-based quality care management, return to work programs, disability management and vocational rehabilitation are *tertiary prevention strategies* because they can provide earlier interventions, limit the destructive and often disabling impact of serious medical conditions on function in daily life and work, can protect or restore productive lifestyles, and can reduce future costs.

In fact, a study at the Milken Institute has calculated that seven chronic conditions (cancer, heart disease, hypertension, mental disorders, diabetes, pulmonary conditions and stroke) are costing the US economy alone more than \$1 trillion per year – with anticipated growth rates of the prevalence of those seven conditions to yield an illness burden of \$4 trillion per year by 2023. However, as compared to this “business as usual” scenario, plausible estimates of potential gains (avoided losses) associated with reasonable improvements in prevention, detection and treatment of just those seven conditions would cut annual treatment costs in the USA by \$217 billion and reduce health-related productivity losses by \$905 billion by 2023. Furthermore, just lowering obesity rates alone could lead to productivity gains of \$254 billion and the avoidance of \$60 billion in treatment expenditures (Devol *et al.*, 2007).

### **The need for integrated solutions**

These are global issues that require integrated, comprehensive solutions. Those at risk have the most to gain. Risk has historically had two sides of the definition – clinical risk and financial risk. The financial risk implied who was “managing” the cost of care (e.g. health plans, governments). However, more recently it is becoming recognized that the parties that are ultimately at financial risk are the employers and their employees/consumers, because they have to pay continually higher insurance premiums or tax basis since insurance companies and/or governments merely pass along the increase costs that are incurred. Therefore, the bearers of the clinical risk and the financial risk are merging.

It was originally thought that the insurance companies through their actuarial models would insulate people from the ultimate financial risk by covering the catastrophic cases of acute and episodic injury and illness. This is an important element of insurance risk and we should never be in a position where we penalize the victim of random and unfortunate trauma or genetic influences. However, one of the harsh realities of the managed care era of the 1990s is that “health plans” tended to focus too much on the financial transactions of healthcare rather than the clinical transactions. Therefore, they

did not truly manage the health of people; they too often focused on merely trying to manage cost through restricting access, utilization and price.

As a byproduct of that era, employers began to “self insure” because they felt they could manage the cost components better. Unfortunately, all too often the attempts by employers at cost management were fragmented, with medical costs, pharmacy costs, workers’ compensation costs, disability costs and EAP/behavioral health costs lacking coordination and integration. With these well meaning but siloed efforts, employers still experienced a rising tide of total costs – because even though they saw savings in one area, it often led to greater expense in another area. An example of that was taking a higher cost antihistamine off a drug formulary to save money by switching people to the lower cost antihistamine, only to find the sedating side effects of the cheaper antihistamine led to drowsiness at work and subsequent increase in presenteeism and on-the-job injuries and ultimately higher total costs – in spite of a lower pharmacy spend (Bunn *et al.*, 2003).

One of the reasons we see such an emphasis on value-based benefit design is to focus on what will truly add broader value in better health outcomes and lower total costs from an overall integrated population health and productivity enhancement perspective, rather than having blinders on to impact only one cost silo just because that is the way employer benefit administrative functions were established (Lynch *et al.*, 2004).

This “self insurance” model is being shifted onto the individual consumer through consumer-driven health plans and health savings accounts, because many employers want the consumer to bear some of the accountability and financial risk of their healthcare utilization and cost. However, unless empowered to be a wise healthcare consumer the untrained patient/consumer tends to avoid care because of the impact of higher co-pays and deductibles (Employee Benefit Research Institute, 2008). This can then lead to delays in necessary care until more severe symptoms develop and the patient ends up in an emergency room or with a hospitalization. Then the employer realizes even though they shifted some of the medical/pharmacy cost to the individual, the total cost has gone up from more absenteeism and productivity decrements at work due to medical conditions and health risks that are not being well managed.

Furthermore, even though they may shift some cost to the consumer, employers do not want to abdicate their role in assisting their people to attain better health, because they need a healthy workforce to yield a productive workforce. Employers are realizing they need a strategy that allows them to buy the value of better health for their people rather than just pay for the volume of more healthcare services. In fact, employers might be willing to pay a little more on the right healthcare services if they get the greater value of a healthier workforce.

Even employers who think they are protected by continuing to buy “fully insured” health insurance are realizing that they still face the risks of being self insured – it is just a year delayed when the insurance company raises their premium rates – since the rising tide of costs has caused another trend increase. Costs are just passed on from the insurance company to the employer and typically the employer is passing more costs on to the employee. These ill-fated strategies focus on trying to manage cost and should focus more on trying to truly manage health and manage care. Clinical performance will yield financial performance.

Even though some employers would like to turn the healthcare dilemma over to the government and remove themselves from the conundrum of providing health insurance and its administrative complexities and costs, many employers are coming to the conclusion that the end game is not about looking at healthcare as a cost for someone else to manage, but rather health as an investment that they need to leverage.

Even in countries that have a single payer, government-run healthcare system, they are now realizing that the growing burden of illness and health risk are overwhelming their infrastructure and capacity. In fact, there is a sort of rationing of care by default through long patient wait times for diagnosis and treatment – leading to impaired productivity and inevitable downward pressures on their economy.

Ultimately, we come to the conclusion that costs cannot be managed by merely shifting those costs to other stakeholders in the system. It is the proverbial balloon effect, where pushing down on one cost silo causes it to bulge out the other side somewhere. We do not lower total cost by merely pushing it to another benefit plan (like group health versus workers’ compensation) within the same employer, or to another health plan, or to another state Medicaid program, or to a national Medicare program, or even to another nation with a one-payer nationalized health system.

**Integrated population health enhancement solutions**

Shifting cost does not lower cost, just as shifting risk does not reduce risk. However, reducing health risk, lowering the prevalence of illness and improving the quality of care management for those with illness does lower total cost (Loeppke, 2008; Burton *et al.*, 2004, 2006; Goetzel and Ozminkowski, 2008). Integrated solutions across the continuum of services of total population health management alleviates this paradox and allows coordination of care for the whole person and the whole population. Furthermore, total population health management requires total population health measurement.

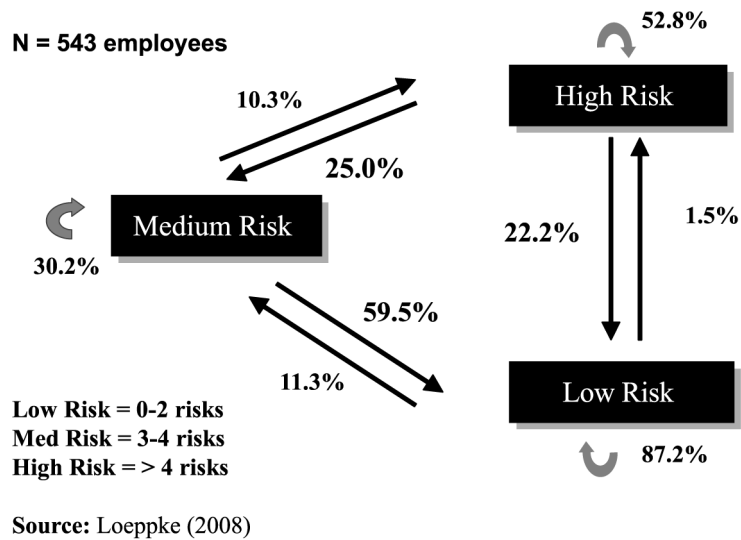
For example, a multi-year CDC-funded case study of an employer’s integrated population health and enhancement initiative has demonstrated significant reduction in the burden of health risk and illness (Loeppke, 2008). In Table II, data from that study shows the distribution of health risk levels among the employees for 2003 and 2005. It also shows the modeled projected health risk levels based on Dr Dee Edington’s Natural Flow Estimator™ model (Edington, 2001) in a demographically matched comparison group had there been no interventions. The cohort subjected to the integrated population health enhancement interventions revealed a health risk distribution in 2005 that was statistically different from the projected natural flow distribution for the matched comparison group of 8.1 percent more employees at low risk, 7.0 percent fewer at medium risk and 1.1 percent fewer at high risk ( $\chi^2(2, n = 543) = 17.99, p < 0.001$ ). Furthermore, the improvement was persistent; almost 80 percent of the employees who transitioned from medium to low risk between 2003 and 2005 maintained a low risk status in 2006 (Loeppke, 2008).

Figure 1, representing findings from that same CDC-funded employer case study, shows the risk level transitions for employees from 2003 to 2005. This demonstrates

|             | Intervention cohort actual<br>2003 | Intervention cohort actual<br>2005 | Natural flow<br>2005 model | 2005 actual versus 2005<br>Difference<br>(no.) | 2005 actual versus 2005<br>Difference<br>(percent) |
|-------------|------------------------------------|------------------------------------|----------------------------|--|--|
| Low risk    | 391 (72.0)                         | 418 (77.0)                         | 374 (68.9)                 | 44   | 8.1  |
| Medium risk | 116 (21.4)                         | 88 (16.2)                          | 126 (23.2)                 | - 38   | - 7.0  |
| High risk   | 36 (6.6)                           | 37 (6.8)                           | 43 (7.9)                   | - 6  | - 1.1  |
| Total       | 543 (100)                          | 543 (100)                          | 543 (100)                  |  |  |

**Notes:**  $\chi^2(2, n = 543) = 17.99 (p < 0.001)$ . <sup>a</sup>Figures in parentheses are percentages.  
**Source:** Loeppke (2008)

**Table II.**  
 Distribution of health risk levels for intervention cohort of employees compared with the Edington Natural Flow Estimator™ model



**Figure 1.**  
Health risk level  
transitions between 2003  
and 2005

that 87.2 percent of low risk employees in 2003 remained low risk in 2005, 11.3 percent moved to medium risk and 1.5 percent moved to high risk. For employees with medium risk at baseline, 30.2 percent remained at medium risk, 59.5 percent moved to low risk and 10.3 percent moved to high risk. For employees in high risk at baseline, 52.8 percent remained at high risk, 25.0 percent moved to medium risk and 22.2 percent moved to low risk. These results show a strong population movement from higher to lower risk levels with minimal reverse flow.

Table III shows the percentage of employees who had a particular health risk in 2003 who no longer had that risk in 2005. The most noticeable changes in health risks were a reduction in the proportion of employees with high cholesterol, an improvement in diet, a reduction of heavy drinking, management of high blood pressure, improved stress management, increased exercise, fewer smokers and a drop in obesity rates.

| Health risk         | Number reporting the risk in 2003 | Percentage of those without the risk in 2005 |
|---------------------|-----------------------------------|--|
| Fatty diet          | 185                               | 83.8   |
| Obesity             | 162                               | 22.8   |
| Lack of exercise    | 150                               | 40.7   |
| High blood pressure | 83                                | 68.7   |
| High cholesterol    | 71                                | 84.5   |
| Trouble sleeping    | 65                                | 38.5   |
| Smoking             | 52                                | 34.6   |
| Poor health         | 32                                | 59.4   |
| Stress              | 29                                | 44.8   |
| Heavy drinking      | 23                                | 82.6   |

**Table III.**  
Percentage of  
intervention cohort of  
employees who  
eliminated a health risk  
between 2003 and 2005  
(based on HRA self  
reports)

**Source:** Loepcke (2008)

One of the unique elements of this initiative was an alignment of incentives among the employees/consumers and their physicians with feedback and support to meet prevention and treatment evidence-based medicine guidelines to enhance consistency in the quality of care. Based on analyzing claims and health coaching interaction data, if there were gaps in care, physicians were informed of the steps that a patient had yet to accomplish in an evidence-based treatment plan. Physicians and their patients received “quality” points according to how closely they followed certain evidence-based clinical and prevention guidelines and closed gaps in care.

In order to enlighten the physician and employee about the link between health and productivity, this innovative employer communicated with the physicians and the employees before the initiative started as well as throughout the initiative. They were also informed that if the employer realized savings in the per member per year medical/pharmacy costs, then for every one dollar of medical/pharmacy costs saved, the bonus pool for the employees and physicians would also be credited with one dollar of health-related productivity savings.

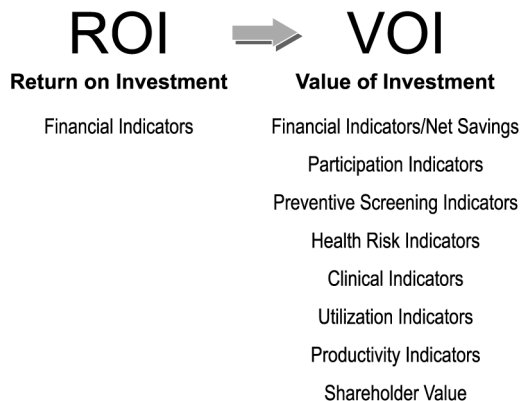
In fact, there were savings generated from this employer-based integrated population health enhancement initiative, even after taking into account all program costs as well as taking into consideration estimated savings from benefit plan changes. A pre-determined percentage of the program’s total cost savings were allocated to employees and their physicians in proportion to the quality points earned by each of them. To my knowledge, this was the first physician and employee/consumer pay-for-performance initiative to give consideration to health-related productivity savings as part of the financial incentive.

**Next generation value proposition of health enhancement: from ROI to VOI**

For these and other reasons the employer community not only wants to see well documented financial return on their investment (ROI) in health enhancement strategies, they are moving beyond ROI to the broader value of their investment (VOI). Figure 2 shows the type of performance indicators that are important to employers and other purchasers of healthcare services.

**Business case to the C-Suite for investing in health enhancement**

The total cost of poor health and the value of good health is increasingly becoming a boardroom and executive “C-Suite” issue. In fact, one large employer wanted to present



**Figure 2.**  
Next generation value proposition: ROI to VOI

a business case to their executive team by estimating their total health related costs (medical + pharmacy + presenteeism + absenteeism costs) and considering the value of an integrated population health enhancement strategy. This was accomplished by using the Integrated Benefits Institute Health and Productivity Snapshot based on the Health and Work Performance Questionnaire (HPQ) database developed by Dr Ron Kessler of Harvard.

Based on that IBI/HPQ model, it was estimated that the employer was likely experiencing a potential of eight days of lost health-related productivity (absenteeism and presenteeism) per full time equivalent employee (FTE) per year, at a cost of \$2,598 per employee. When multiplied by the number of FTEs in that workforce, the modeled health-related productivity cost for that employer totaled \$153 million dollars per year. As a hypothetical example, if the employer was able to establish a culture of health and invest in comprehensive, integrated total population health enhancement strategies that could reduce that health-related productivity loss by one day per FTE per year, it would generate \$18.8 million dollars to their bottom line earnings before income tax, depreciation and amortization (EBITDA).

Furthermore, for the employer to generate that same impact on EBITDA by growing their “top line” revenue, the sales revenue would have to grow by \$76.6 million. The Chief Financial Officer of that company wanted to put it in terms the C-Suite would relate to for the business case, so he then translated that into shareholder value. That modeled \$18.8 million positive impact on EBITDA, based on the 13 times EBITDA multiple that company was trading at in the public market, converted to a \$244.4 million market cap value improvement. With 292 million shares outstanding, that would translate into \$0.84 of value per share improvement.

The HPQ is one example of how self-report health-related productivity measurement instruments are being used to model and measure presenteeism and absenteeism by employers. There are several other similar productivity measurement tools that are also available and being utilized in this burgeoning segment of the industry (Loeppeke *et al.*, 2003).

As another example of how employers are thinking about the value of health and productivity enhancement, the 2007-2008 Staying@Work Report was generated based on a survey of 355 large employers conducted by the National Business Group on Health and Watson Wyatt. This study focused on the relationship between an organization’s health and productivity programs and its business performance. This report revealed that employers with highly effective health and productivity programs experienced superior performance with the following key findings (Watson Wyatt and National Business Group on Health, 2007):

- more than two and a half times as likely to integrate health risk reduction, health management, disability management, health plan benefits and on-site clinics;
- more than three times as likely to integrate health management programs through a single-access-point technology platform;
- yield 20 percent more revenue per employee;
- demonstrate a 16.1 percent higher market value;
- deliver 57 percent higher shareholder returns; and
- have cost increases that are five times lower for sick leave, four and a half times lower for long term disability, four times lower for short term disability, and three and a half times lower for general health coverage.

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### Emerging solutions

These types of integrated total population health enhancement initiatives are coming of age because of the emerging technologies that will support the information exchange required among the key stakeholders. This is about integration of information, translation into knowledge and transformation into action to support a longitudinal health pathway for individuals and their caregivers. In fact, these technology-enabled, data-driven, outcomes-oriented solutions provide the infrastructure to empower the provider-patient relationship in the Medical Home and Chronic Care Model outlined by the American College of Physicians (2006).

Furthermore, it will enable moving beyond the physician/patient oriented medical home to a true longitudinal “health home” that is patient-/consumer-centric with physicians/providers as a coaching staff for the person as the quarterback of their own health. Beyond electronic medical records that are limited to the physician’s view in their practice, this health home will involve a personal health record that will house a broader health ecosystem of personalized information for the individual to actively monitor and manage their health on a frequent, if not daily, basis.

Innovative technology and tools such as Microsoft’s HealthVault and Google Health will eventually enable the necessary evidence-based medicine decision support through connectivity with the personal health records of individuals and the electronic medical records of their providers. There will be wireless remote and home monitoring devices, mobile phones and PDAs used in health coaching reminders. There will be virtual presence interaction between provider and patient through innovations like the Cisco Telepresence capabilities.

Ultimately, it is all about personal responsibility and how to support the person to become their own best coach for health management. The individual is the only one with themselves 24 hours a day, 365 days a year. That is why it is imperative that we invest in a culture of health as an individual, as a family, as an employer, as a community, as a state and as a nation.

However, to accomplish this, we should get back to the basics. Just like the basics of education are the 3R’s (readin’, ritin’ and ’rithmetic), the basics of healthcare should also be the 3R’s (responsibilities, risks and rewards). Align incentives among the key stakeholders – patients/consumers, providers (physicians, hospitals, pharmacies, etc.), purchasers (employers) and payers (health plans, medical/disability insurance companies and government) – to promote wellness, reduce risk, enhance health and improve quality of care for those that already have a medical condition (Loeppke and Hymel, 2006; Loeppke, 2002).

This would help manage both the demand side (consumer/patient appropriate utilization of health enhancing services) as well as the supply side (physician/provider appropriate provision of health enhancing services) in the healthcare value equation. Case studies of aligned incentives with the key stakeholders in integrated population health and productivity enhancement initiatives like these have demonstrated positive results (Loeppke and Hymel, 2006; Loeppke, 2002).

### Conclusions

Throughout the past 20 years, while superficial efforts of healthcare cost avoidance reigned supreme, a hurricane of illness was brewing on the horizon because of the ill-fated lifestyles and health risks within the population. That storm of health risk is now unleashing its fury on our healthcare systems in the USA as well as internationally and we are on the verge of witnessing the inadequate levees of old cost containment strategies

breaking apart from a flood of chronic illness that could lead to a profound change in the economic landscape for business and industry and ultimately for governments.

In fact, unless we address these issues in the USA with a sense of urgency, the financial viability of employers as well as Medicare, Medicaid and social security systems are in peril. It is not just the “the silver tsunami” – the 80 million Baby Boomers qualifying for Medicare and Social Security retirement programs for the elderly over the next 20 years – that are stressing the federal budget and leading to dire predictions of the benefits safety net failure. The main driver of increasing healthcare costs is greater utilization of health services due to the growing burden of health risk and chronic illness. Other problems are the growing labor shortage and the ever-increasing number of working age people between the ages of 18 and 65 who are collecting health-related disability benefits rather than earning paychecks. We need to start making more strategic investments in healthcare and health-enhancing services that support people to stay healthy enough to work if we are going to maintain a workforce that is both able and available to employers competing in the global economy.

That said, innovative, integrated population health and productivity enhancement solutions are emerging. These technology-enabled, data-driven, outcomes-oriented solutions will empower the consumer-provider relationship and drain the floodwaters of chronic illness through better quality of care management as well as reducing health risks upstream through primary, secondary and tertiary prevention.

These are global issues which lead to the conclusion that the health of nations will impact the wealth of nations. In fact, good health is good business.

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#### About the author

Ronald Loepcke, MD, MPH, FACPM, FACOEM, is an international thought leader and consultant in health and productivity. He is Board Certified in Preventive Medicine, Fellowship trained in Occupational Medicine and is a Fellow of both the American College of Occupational and Environmental Medicine (ACOEM) as well as the American College of Preventive Medicine (ACPM). Dr Loepcke is currently the Co-chairman of the ACOEM Section on Health and Productivity, which is actively involved in health and productivity research. He is also on the ACOEM Board of Directors, the Co-Chair of the USPM National Advisory Board, the Health Enhancement Research Organization Board of Directors and a consultant in Health and Productivity Strategy to Alere. In addition, Dr Loepcke is Co-Investigator of a CDC-funded employer research study related to integrated health and productivity solutions. Previously, he was the Chief Strategic Officer and Executive Vice President of Matria Healthcare, Inc. Matria acquired CorSolutions in January of 2006 where Dr Loepcke was the Chief Medical Officer, Chief Strategic Officer and Executive Vice President. Prior to that, Dr Loepcke was the Founder, President and CEO of the Health and Productivity Corporation of America (HPCA), headquartered in Brentwood, Tennessee. HPCA provided health and productivity services to employers for their employees, dependants, and retirees. In October of 2003, HPCA was acquired by CorSolutions. Dr Loepcke has over 20 years of clinical and physician executive experience in the Occupational Health, Preventive Medicine and Medical Management arenas. He has authored numerous articles and book chapters relating to health and productivity, occupational health, managed care, quality care improvement, adoption of evidence based medicine, employer health initiatives, consumer driven healthcare, preventive medicine and innovative models for the business of healthcare. Ronald Loepcke can be contacted at: [ron\\_loepcke@matria.com](mailto:ron_loepcke@matria.com)