Rethinking – *Design Thinking* – Health Care

The Employer Role

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Charter

Background

“The U.S. health care system is notorious for its high costs, which Americans traditionally assumed was the price of excellence. Some American health care is truly superb, but we now know that serious quality problems also plague the system. There is compelling evidence that much care falls well short of excellence, that both too little and too much care is provided, and that alarming rates of medical error persist”.  

"In the past two decades, health care has gone from being a source of national pride to one of America’s preeminent concerns. The nation spends almost $2 trillion annually on health care, and costs continue to escalate to levels approaching a national crisis. As costs rise, more and more Americans have lost access to health insurance. As these individuals face insufficient or nonexistent primary and preventive care, quality suffers and costs rise even further. Unless there is dramatic change, the aging of the baby boomers will drive more cost escalation, followed by intense pressures for cost shifting, price controls, rationing, and reduced services for ever more Americans.

The combination of high costs, unsatisfactory quality, and limited access to health care has created anxiety and frustration for all participants. No one is happy with the current system—not patients, who worry about the cost of insurance and the quality of care; not employers, who face escalating premiums and unhappy employees; not physicians and other providers; whose incomes have been squeezed, professional judgments overridden, and workdays overwhelmed with
bureaucracy and paperwork; not health plans, which are routinely vilified; not suppliers of drugs and medical devices, which have introduced many life-saving or life-enhancing therapies but get blamed for driving up costs; and not governments, whose budgets are spinning out of control.²

"The fundamental problem in the U.S. health care system is that the structure of health care delivery is broken. ... And the structure of health care delivery is broken because competition is broken. All of the well-intended reform movements have failed because they did not address the underlying nature of competition. ... The failure of competition is evident in the large and inexplicable differences in cost and quality for the same type of care across providers and across geographical area. Competition does not reward the best providers, nor do weaker providers go out of business. ... Why is competition failing in health care? Why is value for patients not higher and improving faster? The reason is not a lack of competition, but the wrong kind of competition. Competition has taken place at the wrong levels and on the wrong things. It has gravitated to a zero-sum competition, in which the gains of one system participant come at the expense of others. Participants compete to shift costs to one another, accumulate bargaining power, and limit services."³

"Competition on value must revolve around results. The results that matter are patient outcomes per unit of cost at the medical condition level. Competition on results means that those providers, health plans, and suppliers that achieve excellence are rewarded with more business, while those that fail to demonstrate good results decline or cease to provide that service. ... Competing on results requires that results be measured and made widely available. Only by measuring and holding every system participant accountable for results will the performance of the health care system ever be significantly improved. ... Mandatory measurement and reporting of results is perhaps the single most important step in reforming the health care system."⁴


Relevant Trends

Health care in the United States is subject to many of the trends that other industries and institutions will experience. Among these, and trends within the industry generated by its own actions are:

Population Growth

Population growth continues in the U.S. Most developed countries have slowed population growth to near-replacement levels, and the U.S. birth rate is .9%, in line with the industrialized nations. Immigration in the U.S., however, is high and rising population figures reflect that. The August 2007 estimate of national population size is 302,500,000. For reference, the population in 1950 was 155,000,000.

Population Age Distribution

Age distribution in the U.S. faces radical change over the period from now until 2025. As baby boomers reach retirement, the population pyramid will shift from one with a central bulge, but relatively classic shape, to one with a slight slope from 85+ to 65 and then an almost vertical slope the rest of the way down. The pyramid will develop a significant "aged" segment during this time. In the oldest portions of this segment (70+), women will continue to outnumber men.

Population Movement

A combination of forces is creating a movement of people from rural to urban environments. In developed countries like the U.S., it is the renaissance of the city as a cultural center coupled with the progression from manufacturing to service to
information economies. In 2005, for the first time, the world’s population was more urban than rural.

**Health Care Costs**
Health care in America is outstripping all other costs. In the 1950’s it was 6% of the gross national product, compared with 6% for education and 6% for defense. By 2003, the figures were approximately 4% for defense, 6% for education and 14.2% for health care, more than 1.5 trillion dollars for health care alone. The growing elderly segment of the population pyramid guarantees further accelerated growth in health care costs unless there is radical change to the system.

**Increasing expectations**
The growing availability and capabilities of communications such as cellular telephones, satellite and cable TV, and the Internet are providing people with daily knowledge of living conditions, problems, products, threats and services everywhere. As the media create new and faster avenues of communication, they also raise levels of awareness and create expectations that both fuel demand and encourage willingness to change.

**Internet Penetration**
Computer use and Internet access grow exponentially every year. Information of encyclopedic detail can be obtained more and more easily, and complex, sophisticated processes can be used remotely. Access to high-quality communications and sophisticated computer tools are increasingly available to individuals and groups anywhere. In the United States, Internet penetration reached 70% in 2007.

**Emerging Technologies**
The pace of technological change continues to accelerate, bringing new science to industrial, institutional and governmental uses at an ever quickening pace. Most notable among many promising fields, major technological innovations can be expected in the new disciplines of molecular nanotechnology, robotics and the biosciences.

**New Relationships**
Greater public mobility and access to information is changing the nature of association for many individuals and organizations. Organizations that once operated in isolation are now players in a common environment. Sometimes the emerging relationships are competitive, sometimes cooperative, and new forms of relationship can be expected to be created as conditions evolve.

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**Project Statement**
Using Structured Planning methodology, conduct an advanced planning project to develop information service systems and ways to measure their success for employers, providers, health plans, suppliers, and government. Component proposals should:

1. consider Porter and Teisberg’s *Redefining Health Care* as the primary guideline defining policy strategy.
2. plan services with the understanding that they will be incorporated in a universal health care system.
3. anticipate and plan for networked operational cooperation among all elements of the system—locally, regionally and internationally.
4. collect and incorporate best practices and concepts as they have been advanced by organizations, agencies and planning experts throughout the health care community.
5. accommodate concepts developed for the rest of the mix of players in the system—employers/providers/health plans_suppliers/government.
6. present the information of each component report and presentation in a common format with other components as a set of recommendations that can be used by candidates in the 2008 presidential election.
Goals

As general guidelines the project should:

• Explore a full range of possibilities, paying especial attention to the products of emerging technologies successfully advancing through research and development.

• Include ideas for any processes, tools, systems and products needed for services—including procedures, activities, organizational concepts and any relevant relationships among them.

• Explore revolutionary as well as evolutionary ideas.

• Plan for communication processes by means of which all elements of the system can be made aware of successes and failures.

• Consider potential costs and funding thoughtfully; proposals should not incorporate unnecessary frills, but should not ignore services possibly expensive but having great potential—simply to avoid costs.

• Conceive the properties and features of the concepts as means to build competition on the basis of quality as measured by change in medical condition.

• Consciously reflect the effect of the design approach as a demonstration of the power of design thinking applied to problems in the public domain.

Overall, the solution should:

• Assume that the proposal can be acted upon as it is conceived. Do not underpropose on the assumption that a concept might be politically opposed.

• Demonstrate what might be achieved. The value of the proposal is in its ideas, not its certain attainability. Ideas that might not be fully attainable or feasible today may be achieved tomorrow—if they are known.

Resources

Resources for the project will be:

Physical:

• The facilities of the Institute of Design, including Room 514 as meeting space for the beginning of each class session, and 3rd and 5th floors for team activities.

• Computing support from the fifth floor computer facilities.

• Equipment as necessary from ID resources.

Financial:

• Funding for approved research needs and report generation.

Human:

• Planning Teams

Services for Employers
Fei Gao
Margaret Jung

Services for Government
Hanna Korel
Soo Yeon Paik

Services for Suppliers
Amy Batchu
Min Joong Kim

Services for Providers
Ash Bhoopathy
Lin Lin

Services for Health Plans
Matthew Gardner
Kichu Hong
Sriram Thodla

Preethi Lakshminarayanan
Peter Rivera-Pierola

Lise Lynam
Ye Kyung Yoo
The project will be conducted from August 28 to December 7, 2007.

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<td>Dec 4-Dec 7</td>
<td>Final Presentation</td>
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**Methodology**

The project will be conducted using Structured Planning (See articles on the subject by Charles Owen at [http://www.id.iit.edu](http://www.id.iit.edu) under the *Publications* section of Our Research:


**Issues**

Consider the following topics as initial issues to be investigated. Supplement them with additional issues as information is developed during the first phase of the project.

**Technology**. What approach should be taken toward the use of advanced medical and information technologies and emerging technologies in general?

**Adaptivity**. How should elements of the system be prepared to respond to evolving demographic changes and emerging technological capabilities?

**Networking**. What policy should be taken toward partnering with health care institutions in other regions, suppliers of funding, suppliers of technology, goods, etc.?

**Means of Introduction**. How should services be introduced to facilitate acceptance and implementation?
Public/Private Sector Relationships. How should services be positioned with respect to authority/responsibility for implementation and operation?

Concept Communication. How should concepts of quality in medical condition terms and measurement strategies, processes and system concepts be communicated to the public and institutional users?

Cost Assignment. How should the distribution of the expected costs of services be approached?

Disaster Contexts. What provisions should be made for extreme conditions that can be expected with more frequent environmental emergencies (e.g., Katrina)?

Eligibility. What part should eligibility for care play in planning for the provision of services and measurement of their quality?

Health Responsibility. How should services approach the issue of personal vs societal responsibility for fundamental individual health care?
Defining Statements
**Defining Statement**

**Issue Topic:** Personal Behavior

**Question at Issue**

To what extent should employers enable and provide incentives for better employee health?

**Position**

- **Objective**
  - Employers should introduce moderate measures that promote and reward healthy behaviors, and invest in services that improve health such as preventive health services, screening programs, and disease management.

**Alternative Positions**

- **Objective**
  - Employers must provide a healthy work environment, but refrain from attempts to influence employee behaviors that do not affect other employees.

- **Objective**
  - Employers should regulate personal behaviors and penalize employees whose personal behaviors have a negative effect on their health.

**Background and Arguments**

As costs for providing health care benefits have risen, employers have sought ways to reduce these costs primarily through negotiations with health plans to lower price. While this may reduce costs in the short term and benefit individual employers, it fails to address and seek to improve the causes of increasing health care prices. Many employers have failed to look at the larger picture of seeking to improve the health of employees and to address the indirect costs of health care (absenteeism, lost work time, productivity). Estimates of these indirect costs per employee are higher than the actual cost of health care for employers (Porter 2006).

The problem for employers is how to reduce these indirect costs without forcing behavior change or intruding on personal rights.

The first position calls for moderate measures which are based on voluntary participation by employees. Some employers have already instituted some of these types of programs, such as fitness, smoking cessation, and weight loss programs. So far, these wellness programs have been rated mostly as “somewhat effective” at controlling costs by the majority of employers (Kaiser Benefits Survey 2006). To improve their success rate, employers should establish ways to measure success for employees and for the overall success of the program. This approach provides the greatest potential.

The second position takes into consideration issues of environmental health that employers can address (sanitation, air quality, cafeteria offerings) to improve employee health without imposing on personal rights. This position avoids intrusion into health matters which employees may consider private, but fails to provide substantial improvements to unhealthy employees and, in turn, substantial reduction in indirect costs.

The third position could provide the greatest reduction in direct and indirect costs of health care. Some insurance companies offer discounts for lower risk pools, such as ones containing a higher percentage of non-smokers, which would decrease the direct price of the health plan. However, this could lead to discrimination against employees who have higher risk factors and could lead to their effective elimination from fair access to jobs and insurance.

**Source/s**


Background and Arguments

Employers want to provide health care benefits that their employees can fully utilize to improve and manage their health. Providing benefits helps retain and attract employees and improves the overall health of the employee population. However, employers face a tough job of assessing and choosing the best options for their employees. Appropriate and necessary health care can vary widely depending on many factors including age, sex, ethnicity, family size, and genetics. The problem for employers is how to provide the appropriate and necessary health management methods to their specific employee population while maintaining sustainable benefit costs.

One way to meet employee needs is to offer health plans and wellness programs that provide a great deal of support to individuals. This would require a broad range of options for individuals to choose from and evaluation of the various options to know if they are meeting the appropriate needs. This position could prove beneficial for the health of employees, especially as health plans increasingly move into the role of health managers. However, this position would not be very cost-effective and would not be the best one for a highly mobile workforce.

Another position for employers to take is to hire human resources personnel who can serve as guides to all employees, including retirees. These people could be devoted solely to assisting employees with health care needs and would be akin to a personal health advisor. This option could prove very useful to employees; however, many employees may not trust their employer with sensitive health information.

The position most likely to offer the best options for a diverse workforce is for employers to offer customizable web-based health management tools. This option would allow employees to take responsibility for their health, gain an understanding of their health management, and be proactive. Employers should allow these tools to be portable and owned by the individual, so the tools could still be utilized even if an employee left the company. This option would also be the most cost-effective and could provide superior options to a wide variety of people.
## Defining Statement

### Issue Topic: Family Coverage

### Project
Rethinking—DesignThinking—Health Care
The Employer Role

### Originator
Amber Lindholm

### Contributors

### Question at Issue
To what extent should employers be responsible for providing health care benefits to employee family members?

### Position

- **Objective**
  - Employers ought to offer generous family coverage and extend coverage to legally domiciled adults (overage children, parents, in-laws, domestic partners, etc.).

### Alternative Positions

- **Objective**
  - Employees should only be responsible for providing insurance to the direct employee and dependents.

- **Directive**
  - Employees should be able to add additional family members to their family plan coverage at a cost.

### Background and Arguments

Shifting family structures can make it hard to define who should be covered by an employer-sponsored health plan. While there are certain laws that force employers to cover dependents, employers continue to deny inclusion and seek out ways to reduce the number of people to whom they must directly provide health care benefits. Some have dropped coverage altogether, while others penalize employees whose spouses have elected coverage if they could have received it through their own employer. Companies are also conducting audits to make sure that the dependents listed on the health care policy are really the employee’s dependents. The number that aren’t dependents has been reported as high as 15% (Managed Care Magazine). Denying coverage to family members can force them out into the uninsured pool or force employees to seek legal action to challenge the employer’s decision.

While including additional people on the health benefits coverage may increase the direct costs for employers, it is something they ought to do. Allowing employees to include those family members that need insurance can reduce the number of people without insurance and help reduce costs to the overall population. Employers ought to cover all necessary children, including stepchildren and grandchildren, when appropriate. Employers should include legally domiciled adults. (A Legally Domiciled Adult is an individual over 18 who has for at least 6 months lived in the same principal residence as the employee and remains a member of the employee’s household throughout the coverage period.)

Extending coverage does not necessarily mean that the employer pays the same amount of cost for this coverage, but the employee should at least be able to include additional family members. This position would mean that employees wishing to add people that are not normally included as family members would be able to do this at an additional cost per person.
**Background and Arguments**

Employers want to ensure that employees are satisfied with their health care benefits. One way employers have approached this is to offer as many choices as possible by implementing health plans that provide everything for everybody. This strategy is not cost-effective or focused on truly meeting employee needs. Employers should incorporate employee feedback into their process of defining benefit plan options. Collecting feedback from the employees must be done; however, the amount of influence this information has on the plan definition can differ.

One position is to collect employee satisfaction surveys about the administration and options of their health plan. This information could be used by the benefits administrator to guide change in the health plan itself. Feedback could be given to the health plan to improve processes. This may lead to greater employee satisfaction, but may not help contain costs.

Another position is for employers to use employee feedback as a negotiation tool. For example, when the employer is looking to renew a contract with their health plan they may use negative feedback as a way to negotiate for a lower price. This may help lower direct employer costs, but may not improve service or options for employees.

The position most likely to both lower cost and increase employee satisfaction is to combine statistical data with employee feedback. Feedback alone may give the employer a good idea of problem areas to resolve, but statistical data must also be used to direct costs and guide the design of health plans. For example, measuring health claims data may give insight into the services most used by employees. The employer would then be able to negotiate for better options and prices on those factors critical to their population. This would lower costs, increase employee satisfaction, and help attract and retain employees.
The current system of employer-based insurance ties the employee’s insurance to the employer and limits portability. When employees leave their job they cannot take their health insurance with them. This is becoming more of an issue due to trends such as increases in the mobility of the workforce and the decreases in the number of years employees typically spend at each job. One negative consequence associated with these trends is that when employees switch jobs there is often a waiting period during which the employee is not insured. Approximately 75% of workers face a waiting period, with the waiting time averaging 2.2 months (Kaiser Survey). In addition, the increased likelihood of changing plans discourages insurers from investing in long term care because they may not see the end benefits of the investment. Moving the system to one in which the individual has control over their health insurance policy is the best way to address portability.

One position that employers can take is to encourage employees to purchase individual insurance by providing cash incentives. Since the current individual market is still not competitive in cost or value, however, it may not be in the best interest of the employee.

Employers could also push for changes in government policy that would allow more competitive individual insurance policies. One thing they could push for is to allow individual policies to have the same tax benefits as employer-based programs. While this ought to be done to advocate for the individuals, there is not much incentive to do this.

The position that would prove the most useful to the current system is to provide access to a portable health savings account that individuals would be able transfer with them as they moved jobs. This would be in the interest of the employer to help employees to save for their own health care expenses and would help some portability issues.


Defining Statement

Project

Rethinking – Design Thinking – Health Care
A Health Care Framework for Employers

Originator

Fei Gao

Contributors

Background and Arguments

The employers must disclose information about coverage, cost, and results of their health care to the public. The coverage and results of health care are important responsibilities of the employers for the community and are indicators of employee benefits just as pension and salary are. Employers have the responsibility to disclose the information of their health care benefits. This publicly available information can enable job seekers to actively search and compare among employers while they are trying to find a job. This will in turn promote competition among employers to provide the best health care benefits, thus engaging the most talented. By sharing and comparing performance results, including health outcomes and costs, employers would become more informed about their efficiency and effectiveness in providing health care benefits. Therefore, it is essential that the measurements are quantifiable, comparable, detailed, and accurate.

The first alternative position argues that employers share their experiences in providing health care benefits with each other. The position is valuable because the employers that are providing health care benefits with higher value and lower cost should share their experiences in planning and implementing their health care benefits so that other employers could benefit from the shared knowledge. Lowering the health care cost of the entire nation requires sharing and cooperation rather than keeping the competency. Disclosing health care benefits and outcomes should be mandated.

The second alternative position takes into consideration the issue of confidentiality, discussing the limitation of disclosed information due to industry competition. However, detailed financial statistics mandated by the stock market could also be regarded as business secrets before financial transparency of the public companies is mandated. What is more, when the outcome information is aggregated at the employer level, personal identifying information is removed, so that privacy of the employees are not intruded. Therefore, employers objections to disclosing health care benefit and overall outcome information are greatly reduced.

Issue Topic: Transparency

Question at Issue

To what extent should an employer disclose the coverage, cost, and result of the company's health care?

Position

Employers should be mandated to provide information about the coverage, cost, and result of their health care benefits to the public to promote competition among employers.

Alternative Positions

Employers should create a forum to facilitate sharing and discussion of their experiences with providing health care benefits.

Employers should not be mandated or pressured to share information regarding the coverage, cost, and result of the company's health care.

Source/s

Background and Arguments

Employers, as the major purchasers of health care services in America, have the power to enable or provide incentives for a better health care system. However, the employers missed their opportunity to contribute to establishing the right kind of competition among providers and health plans; instead, they participated in forming and reinforcing a faulty medical system of zero-sum competition.

Most of the employers focused their bargaining power on controlling the direct and short-term cost of health care services, and ignored the indirect cost, long-term cost as well as the overall value of the health care benefits for the employees. The full utilization of the employers bargaining power also caused the frequent churning of health plans, which neglects the impact of being unable to measure the value of health care in a complete cycle of two to three years.

One of the most disastrous impact of the employers' bargaining power is seen in cost shifting. Big employer groups are able to cut the price of health plans dramatically, while shifting the cost to small employers that have no such bargaining power. The policy taken by the big employer groups is self-defeating since cost shifting could only form the vicious circle of cost rise that haunts all the stakeholders in health care.

The bargaining power of employers is a powerful weapon to initiate the reform or evolution of the health care system only if the power is used under the right policy and is, in a way, constrained. The employers must focus on value at the right time horizon rather than only on the short-term, direct cost of health care. Different sized employers must be leveraged so that cost shifting is curbed. Smaller employers could organize themselves and form bigger health care purchaser groups to gain more bargaining power.

Mandated regulation of the bargaining power may incur higher administration cost and distortion of the competition. Unlimited utilization of the bargaining power is also dangerous for the continuous cost shifting.
Background and Arguments

The 2001 Census reports that there are 281 million Americans; 21 percent are age 55 or older and 13 percent are age 65 and older. The number of older Americans is projected to grow rapidly over the next few decades when baby boomers enters their 60s. As the need of retiree health care is increasing, the cost of health care in the U.S. is skyrocketing. Firms are reducing access to retiree health care because employers are looking to limit rising health care costs. In 1988, 66% of large firms (with more than 200 employees) offered health coverage to retirees, in 2002 the figure dropped to 34%. Among small firms with less than 200 employees, only 5% offered employer-sponsored health insurance in 2002.

Early retirees do not qualify for Medicare, and because Medicare does not include certain benefits such as prescription drugs, many retirees without employer health care coverage must turn to private health insurance even if they are available for Medicare. However, the premiums for individual health insurance policies are often 50% to 100% higher than group plans offering equivalent benefits. Therefore, the employer's coverage is becoming the most essential and feasible way for retirees to be covered.

Health care benefits after retirement is becoming a large area of employee concern. Shifting the cost to the government or to the individuals is both unethical and impractical. To simply drop the retirees is unacceptable since the retirees are at the age that health care coverage is even more essential than when they were working. Before dramatic reforms take place in health care, one good solution is to gather the retirees to make them qualify for a group plan. Employer consortia could be formed to enable small employers to provide group plan to their retirees. It is the best if employers could provide complementary benefits to subsidize the retirees for the expenses that are not covered by Medicare such as prescription medicine expenses. Before the cost of health care is greatly lowered, the employers could leverage their health care expenditure by adjusting the proportion that they share with the retirees. To include the retirees in the same risk pool of the current employees would raise the premium of the whole workforce dramatically and thus raised the cost of healthcare. Although this option might be beneficial to the retirees, it is unacceptable from the perspective of the bottom line of the whole company and the current employees. The general policy should be that low cost, high value, and specialized group retirement plan is ensured and no gap is left between retirement and the age of 65 (the age after which the retirees are eligible for Medicare coverage).
Defining Statement

**Issue Topic:** Responsibility

**Question at Issue**
To what extent should employers monitor the quality of providers?

**Position**
Employers should lead the reform towards a value oriented health care system by starting to monitor the providers, and in the long run, the employers should reduce their involvement and urge the health plan to monitor the providers.

**Alternative Positions**
- Employers or employer consortia should not be involved in monitoring the providers.
- In order to improve the quality of care delivered, employers or employer consortia must continue monitoring the providers and try to influence the medical practices of the providers.

---

**Background and Arguments**

Employer consortia such as Leapfrog Group and Pacific Business Group on Health are formed to encourage health care information transparency, set up quantitative and qualitative standards to measure medical practice, reduce preventable medical errors, reward doctors and hospitals for improved quality and outcome, and help patients and employers to make important decisions. Some organizations communicate directly with providers while others interact with both health plans and providers. The employer consortia represent the initiatives of the employers to advocate and lead the health care reform, and their achievements up to now are promising. The employer as one of the biggest health care purchasers in the U.S., are at the best position to initiate the reform.

However, the practices of employer consortia insert the employers who tend to micro-manipulate the medical practices of the providers between the health plans and providers and complicates the existing situation. The employers, who have great power in negotiating with the health plans, should urge the health plans to take more responsibility to monitor and evaluate the providers. This would be more practical since the health plans have more expertise in medical care and are in a closer relationship with the providers.

The focus of the employer consortia is on the procedure of medical practices rather than on the outcome of care. Some consortia adopted pay-for-performance (P4P) policy to reward the providers that comply with the standards. P4P is an important transition model in moving towards value and outcome based evaluation, it is not a long-term solution. Also, P4P provides incentives for interventions of care rather than for long-term, full cycle care.

Employers consortia such as Leapfrog Group evaluated the hospitals as a whole rather than focusing on the medical condition level. Although evaluating hospitals does help to establish competitions among them, it does not effectively assist the patients to make good decisions to choose from the providers for specific medical condition or promote competition on the care outcomes.
Defining Statement

Project
Rethinking—Design Thinking—Health Care
A Health Care Framework for Employers

Originator
Fei Gao

Contributors

Source/s


Issue Topic: Responsibility

Question at Issue
What policy should the employers take to evaluate the health plans?

Position
All the employers should evaluate health plans not only on cost, employee satisfaction, and network accessibility, but also on outcome and the offering of all kinds of preventive programs.

Alternative Positions
The evaluation method applied by the employers to evaluation health plans should vary depending on the size and power of the employer.

Employee satisfaction should be the most important factor an employer takes into account when evaluating health plans.

Background and Arguments
Different employers use various measures of quality to evaluate their health plans. Applied measures include "availability of physicians, waiting times for physician visits, ease/competence in handling claims, and complaints by employees." As Jon M. Thompson, Ph.D. puts it, "the vast majority of employers do not report any knowledge of clinical or technical quality information used by, or made available by their plans, nor do they use clinical outcomes information in the review of their health plans". These employers do not have the awareness that their perception of the quality of health plans should be improved in the future. They tend to view quality in terms of employee satisfaction of the covered services, access to network physicians, and the claims process. In general, there are much fewer small employers paying attention to the outcome of the health plans than the bigger employers. However, all the employers should regard not only the satisfaction of the services but more of the outcome of the health plans in evaluation. The needed information for outcomes should be made accessible by the health plans for all the employer purchasers. The employers should actively apply the information in plan evaluation and plan choosing.

Not only should outcome be taken as one of the main criteria for plan evaluation, but the accessibility of preventive programs should also be considered. Not all the health plans offer health education programs, preventive care, or wellness programs, though these programs are critical ways to control cost and maintain health before treatment is needed. Employers should urge the health plans to offer these preventive programs. The availability of these options and the effectiveness of the preventive care programs should all be considered important measurements for health plan choosing.
## Background and Arguments

For the value-based competition in the health care system, information to user who could be employer and employee has to be opened in accessible form. Current pricing practices are opaque and the health plans or providers obscure price reporting and price comparisons. It is difficult, if not impossible, to learn the price in advance services, and many providers are actually unable to quote a price. Health plans are beginning to post negotiated prices for specific medical services on their website. As client of health plans, employers have the potential to access the information and having more knowledge would help in choosing a suitable one for them. Ultimately, it can be the basic power to drive value-based competition (Porter 2006). The problem for employers is how much choice should be given to employee on health plans.

The position addresses that the employer should give choices to employee, but it is with limits. Customized information is desirable but it will cause another cost to employers. To provide it, employers have to go through preparing information to the employee. Moreover, diverse health plans in a company could cause inefficiency. With customized health plan for each employee’s major needs, this position would be the most persuasive one.

The first alternative position stresses the rights and responsibilities that employer and employee must have regarding their health plan. As the employee is the end user of the plans and is also paying taxes and premiums, they have to know information about it. But this position disregards the costs and efforts for this process, so it might be hard to execute.

The second alternative position considers the efficiency and reduction of costs as the most important issue compared to the rights employees have on their health plan information. Without informing employees, they would not be troubled with any extra work and will keep their data for themselves. One of the critical points in this position is that it leaves out the rights employees have on the information on their health plan.

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### Defining Statement

**Issue Topic:** Choice

**Question at Issue**

What level of choice of health plans should employers provide for employees?

**Position**

- **Objective:** Employers should provide information on selected health plans which the company has chosen.

**Alternative Positions**

1. **Constraint**
   - Employers must provide all the information on the health plan they have chosen.

2. **Objective**
   - Employers ought to provide no information on health plans to employee.

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**Contributors**

Margaret Jung

**Source/s**


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**Version:** 3  **Date:** 10 December, 2007  **Date of first version:** 5 September, 2007
Defining Statement

Project
Rethinking – Design Thinking – Health Care

The Employer Role

Originator
Margaret Jung

Contributors

Source/s

Question at Issue
What level of health care benefit coverage should employees provided to the entire workforce?

Position
Employers should provide health care benefits to employers based on their working hours.

Alternative Positions
Employers should provide health care benefits to only full-time employees.

Employers should provide health care benefits to entire workforce.

Background and Arguments

A survey of major companies revealed that 96% of CEOs and CFOs were critically concerned about health care costs for 2004. A different survey of smaller employers found that 22% were considering terminating health benefits for cost reasons. It indicates that employers are trying to avoid the burden of taking full responsibility of offering health plan to employees. It is the basic reason for employers to try to reduce cost by providing different benefits to various types of employees. The several kinds of employees are full-time, part-time, and freelancer. The coverage issue comes up with this circumstance.

This position intends to cover as many employees as possible for the health care benefits. The employer has limited resources and costs to maintain the corporation. They can not support the entire workforce, but there has to be some protection to all employees. Since the the employer’s main responsibility is to maintain and grow the company, proportional reward to the employee would be needed. Thus, this position would be persuasive.

The first alternative position is representing the employer’s effort to reduce the cost of maintaining the company. In order to keep the company in good balance, they should provide it to only full-time employees. It would be one of the best ways to reduce the cost for the employer, but it is a situation of cost shifting, which is occurring right now in the health care system.

The second position demands full coverage to the entire workforce from the employer. Employer’s avoiding responsibility is one form of cost shifting. Current health care competition takes the form of cost shifting rather than fundamental cost reduction. All participants seek to lower their own costs by shifting the burden to other parts of the system. As we can see from the disastrous outcome in the current system, the second alternative position might be a solution. But without any substitute idea for employer’s supporting the entire workforce however, this would not be realistic idea.
Defining Statement

Project
Rethinking – Design Thinking – Health Care
The Employer Role

Originator
Margaret Jung

Contributors

Source/s


Issue Topic: Privacy

Question at Issue
How much information should employers really know about an employee’s health?

Position
Employers should know about an employee’s health status if it is directly related to the work he or she was hired to do.

Alternative Positions

Employers must know the entire of employee’s health status in order to manage the cost burden of health insurance.

Employers ought to know about an employee’s health if it has a negative impact on health insurance premium.

Background and Arguments
One of the emerging issue in the American workplace is the attempt by employers to control certain private habits and proclivities of their employees that have no relationship to job performance. For example, a growing number of companies are refusing to hire smokers. The driving force behind this trend is economics. Employers are concerned about escalating costs of employee health insurance. They are attempting to cut costs by firing and/or refusing to hire people whose lifestyle and health status appear to place them at risk of illness or injury. The Health Insurance Portability and Accountability Act was enacted by U.S. Congress in 1996, ensure that the privacy of individual’s health information is protected.

The employers want to keep their costs down by receiving employees health information. It might be a critical point to invade employee’s privacy. There has to be some regulation or guideline on limit of receiving and using employees health information for their health plan costs. The position and alternative position represent the level of the regulations.

The position considers both the employer’s cost burden and employee’s privacy. As of now there is no specific rule or guideline to determine what kinds of information would be directly related to specific jobs.

The first alternative position values the cost burden of employees as the core value in the decision making process. It is true that it is one of the important factors, but this leaves out the employee’s rights to privacy regarding their health status.

The second alternative position could be a solution to control cost. However there must be some definitive rule to protect employees. Without conclusive results as to the potential negative impact on health care premiums, private health information that is disclosed by the employee has the potential to be misused or misinterpreted.
A Health Care Framework for Employers

Rima Kuprys

Employer collaboration

On what kinds of issues should employers collaborate?

The employer should collaborate on issues that will improve healthcare costs and quality for the long-term. Employers should collaborate to motivate providers, health plans, suppliers and the government to focus on value for the consumer and measurement of results.

Employers should collaborate for transparency in all aspects of healthcare, including providers, pharmaceuticals and government.

Employers ought to collaborate with other employers to minimize and eventually eliminate healthcare plan purchasing by employers for employees.

Employers have the power to improve and fix healthcare because of the large numbers of healthcare plans they purchase. Furthermore, employers have the opportunity to demand improved healthcare and more choice for their employees based on their large-purchaser power. (Porter 307) If employers were to stop purchasing healthcare plans, they would cause a disruption in the healthcare industry. As a result, health plan companies will have to listen to the wants of employers. There is a real necessity for companies to work together in this effort. (Both large and small employers) The more they support this movement, the more impacting it will be. Employers using their leverage to sway the cost of healthcare plans could cause cost-shifts that make the plans more expensive for others which would be an improper use of their leverage. Employers should maximize the most positive and beneficial change.

Alternative position #1: Transparency is clearly lacking in providing better and more choice in healthcare. When employers purchase managed care plans (HMO, PPO, etc) they are not only agreeing to a certain insurance plan, but they are also buying into a network of hospitals, doctors, etc. However, there are generally neither available statistics about the quality of care at these places/doctors, nor prices of what certain procedures cost. (Herzlinger, 145, 164) This is crucial information if employers want to provide options for employee healthcare plans, as well as to obtain the best healthcare plan they can afford. With transparency, healthcare plans would become more competitive and be forced to improve quality and lower costs. However, to demand transparency in other aspects of healthcare is not the role of the employer. The employers are responsible for providing quality healthcare plans to their employees, not taking over the entire healthcare industry. Since employers deal directly with healthcare plans, their power and authority should be limited to redefining and changing healthcare plans.

Alternative position #2: Although some believe that employers should not play a role in providing healthcare to employees, now is not the appropriate time for employers to pull out of the system. (Porter 307) Employers wield the power to change the healthcare system and its standards. Employers need to work to fix the current healthcare system. Once a stable system is in place, the role of employers as healthcare plan suppliers can be re-evaluated.
A Health Care Framework for Employers

What level of company management should be in charge of the decisions and performance of healthcare benefits of their employees?

Heritage plans ought to be chosen and evaluated by qualified and educated health plan experts who are in the HR department and ultimately approved by the CEO and employees.

Healthcare plans ought to be chosen by the employees at the company, since they are the ones who are affected by the health plan decision.

Healthcare plan options should be outsourced to personnel outside the company.

Employers are not informed purchasers of healthcare. They do not know how much each employee uses for healthcare. They are not aware of the specific needs of the employee. They do not know why certain plans cost more than others, nor what number of older, sicker and families are enrolled in the health plan. (Herzlinger, 91)

Alternative Position #1: Employees should be included in the choice of a healthcare plan, but they should not be its sole researchers and deciders. The employer provides the tax-free healthcare plan, as well as funds some or even all of the premiums of the plan. However, the employer is not qualified on his own to decide the company’s healthcare plan, either.

Alternative Position #2: A healthcare plan specialist who works outside of the company has extensive knowledge of healthcare plans. He or she would be an unbiased, third-party entity that could ensure privacy and security for employee sensitive health data. Unfortunately, he or she lacks knowledge of specific employee needs and cost and quality concerns of the employee. This process would produce more paperwork and an undesirable complex system of layers.
Defining Statement

Issue Topic: Funding health plans

Project
Rethinking – Design Thinking – Health Care
A Health Care Framework for Employers

Originator
Rima Kuprys

Contributors

Source/s
Diamond, Frank. “Employers Roll Up Their Sleeves” Managed Care Magazine August 2007


Trends in Large Employer Health Plans
www.Medsave.com

Question at Issue
To what extent, if any, should employers fund health insurance plans for employees?

Position
Employers must consider the health status of all their employees and assist them if there is financial need.

Alternative Positions

Employers should partially supplement the increased costs of health plans their employees pay because of inappropriate cost-shifting created by the employers themselves.

Employees ought to not concern themselves with additional funding for their employees’ healthcare plans, but rather ought to promote higher quality plans that will decrease long-term costs.

Background and Arguments
Healthcare costs are on the rise and many employees receive less health benefits for a higher cost. Many employees are struggling to pay escalating premiums and high healthcare bills. Costs for care should not be this high. Some partially blame the employers for the increase in healthcare costs (without an increase in quality) and decrease in benefits. High healthcare costs exist and must be dealt with accordingly. Employers need to provide healthcare funding for their employees. The discounts a company receives from a health plan company for buying in bulk may be used to subsidize those unable to fully afford their health plan. Furthermore, monetary incentives should be implemented for those who uphold healthy lifestyles. Johnson & Johnson gave its employees $500 to take health risk appraisals and make healthy lifestyle changes. (Diamond, MCM)

Funding for preventative healthcare programs (which are considered to cut healthcare costs by 30% in the long-term) could also be subsidized by employers upfront. Since this is more expensive at first, but more beneficial to employee health and therefore cheaper for the company in the long-run, this investment should be a consideration for employers. (Diamond, MCM) Furthermore, in the future employers may transfer buying power to their employees. Funds normally spent by the employer on group healthcare should continue to be distributed to each employee. However, the way in which the distribution should occur is another issue, whether the funds should be distributed by a community rating (equally regardless of age or health) or an experience rating (rates that are affected by the health status of the employees) (Herzlinger, 254-5)

Alternative Position #1: Employers have been inadvertently increasing healthcare plan costs for many years. They do not look at the long-term effects of their actions. By demanding lower rates and discounts for the bulk healthcare they purchase, they have actually driven up the cost of healthcare for the long-term without improving healthcare quality. Employees are forced to compensate for the increases that employers have caused. Therefore, some say that employers should cover the increased costs. However, like the cost-shifting, this would only be a temporary fix to the problem. (Porter, 70)

Alternative Position #2: Although ideal, and a goal for the near-future, supporting higher-quality plans will not fix the risen costs that employees and employers are now paying for healthcare. The employers need to focus on helping employees fund their current expensive healthcare and look in the long-term to gradually demand improved healthcare over time.
Rima Kuprys


**Background and Arguments**

A new initiative for employers is improved healthcare plans for employees. Improved healthcare plans that include more options and choice, transparency, and better care would benefit employees health. Employers would also benefit because healthier employees means less paid sick days, decreased spending on health plan premiums, etc. If employee health improves with a specific health care plan, some argue that the health plan should be rewarded for its positive performance.

There should then be a reward calculated as a percentage of payback to the health plan. Not only would this reward maintain a positive relationship between employers and their health plan, but it would also provide an incentive for optimal work. The employers should have actuaries on-staff in the HR department who would calculate the savings based on employee health. In the event that healthcare does not improve, employers would have the option to not reward the healthcare company, as a penalty for not providing improved care.

**Alternative Position #1:** Providers should be doing their job to the best of their abilities without “incentives” to do so. There should not be any “rewards” given to stakeholders by employers. Although this is ideal for the healthcare system, however, at this point it is not a realistic situation. Yes, health plans and providers should be doing the best job possible, regardless of incentives, but many are not doing so. Reward options for these stakeholders should be explored until a viable solution for improved healthcare is discovered.

**Alternative Position #2:** Employers should track the points healthcare providers and health plans earn with improved healthcare. Once a certain number of points is attained, the providers are rewarded by the employers. This reward given regardless of the money saved by the employer should be an instantaneous payment. However, the improvements to healthcare need to be analyzed and assessed. Instant rewards before proper review of the service and care provided may result in premature success.
### Function Structure

#### The Employer Role

**Provision for Government**

**Provision for Health Plans**

### Collecting Information
- 1. Survey employee wellness
- 2. Test employee health care knowledge
- 3. Measure employee productivity
- 4. Gather working environment quality
- 5. Monitor employee health
- 6. Record employee demographics and lifestyle
- 7. Track employee adherence with internal health programs
- 8. Survey employee satisfaction with all health benefits
- 9. Track employee out-of-pocket expenses
- 10. Track administrative costs

### Assessing Information
- 11. Assess effect of work environment on health
- 12. Evaluate employee health and productivity relationship
- 13. Measure indirect health costs
- 14. Assess employee wellness programs
- 15. Review plan utilization trends
- 16. Analyze health claims data
- 17. Assess cost burden to individuals
- 18. Perform cost/benefit analysis
- 19. Evaluate employee health results
- 20. Evaluate quality of health plan

### Communicating Information
- 21. Publish comprehensive health benefits offerings
- 22. Report employee coverage and usage
- 23. Disclose health care financial data
- 24. Disclose employee out-of-pocket expenses
- 25. Publish employee overall satisfaction results
- 26. Provide health plan results
- 27. Publish company wellness program results
- 28. Release overall company health status
- 29. Share employee health care knowledge

### Collecting Information
- 30. Collect employee health plan satisfaction
- 31. Collect employee plan utilization data
- 32. Collect employee out-of-pocket expenses
- 33. Survey employee ideas for new health plan options
- 34. Collect employee actual usage of health care equipment and medicine
- 35. Gather employee’s rehabilitation cycle and expense
- 36. Gather data of employee’s knowledge level of self-health management
- 37. Assemble information on employee health lifestyles
- 38. Survey employee’s criterion to choose provider and supplier
- 39. Collect uncovered employee information

### Assessing Information
- 40. Summarize employee satisfaction with health plan
- 41. Recognize health plan usage trend
- 42. Identify employee preference on health plan options
- 43. Recognize employee’s rehabilitation pattern
- 44. Summarize data of employee’s self-healthcare knowledge
- 45. Identify employee’s health lifestyle trend
- 46. Identify employee’s criteria for health care decision
- 47. Collaborate with other employers to create health plan evaluation

### Communicating Information
- 48. Provide employee satisfaction data
- 49. Provide employee demands for new health plan options
- 50. Provide employee preferences for health plan options
- 51. Share collaborator health plan evaluations
- 52. Share employee rehabilitation patterns
- 53. Share data of employee’s self-healthcare knowledge
- 54. Provide employer health lifestyle trends
Provision for Providers

Collecting information
- 55. Collect employee wellness data
- 56. Provide health check
- 57. Track employee mental health
- 58. Record employee demographics and lifestyle
- 59. Measure employee productivity
- 60. Survey employee satisfaction of providers
- 61. Survey drug usage
- 62. Track patient recovery data
- 63. Measure treatment adherence
- 64. Test employee health care knowledge

Assessing information
- 65. Evaluate overall provider performance
- 66. Evaluate provider performance on specific medical condition level
- 67. Evaluate impact of health related problems on productivity
- 68. Evaluate employee physical/mental wellness
- 69. Evaluate employee recovery
- 70. Evaluate employee adherence
- 71. Evaluate ROI on wellness program
- 72. Summarize employee satisfaction
- 73. Analyze health claims data

Communicating information
- 74. Provide current wellness program data
- 75. Provide patient lifestyle data
- 76. Provide employee productivity data
- 77. Provide patient recovery tracking data
- 78. Provide patient treatment adherence data
- 79. Provide employee physical/mental wellness evaluation data
- 80. Provide medicine consumption data
- 81. Inform employee satisfaction
- 82. Provide employee health care knowledge data
- 83. Provide insight for barrier of health
- 84. Measure employee recovery rate
- 85. Compile quantity of products purchased
- 86. Measure employee product needs
- 87. Measure employee product preferences
- 88. Measure employee product usage
- 89. Measure employee product satisfaction
- 90. Collect out-of-pocket cost for health supplies
- 91. Measure prescription adherence

Provision for Suppliers

Collecting information
- 92. Assess employee satisfaction with suppliers
- 93. Assess employee needs from suppliers
- 94. Assess employee usage of supplier goods
- 95. Identify preference trends for employee health supplies
- 96. Identify purchasing trends for products
- 97. Assess health benefits of suppliers' products
- 98. Test effect of drugs on employee productivity
- 99. Evaluate employee recovery rates

Assessing information
- 100. Submit employee-supplier satisfaction
- 101. Submit health benefits of suppliers' products
- 102. Provide patient lifestyle summary profile
- 103. Provide employee recovery rates based on supplies
- 104. Report employee drug compliance
- 105. Report success/failure of products
- 106. Report employee product need
- 107. Report product purchasing trends
- 108. Report employee out-of-pocket cost for health supplies
Design Factors
Design Factor

Project
Rethinking–DesignThinking–Health Care
The Employer Role

Activity
Collecting Information

Originator
Amber Lindholm

Contributors

Title: Important factors not measured

Source/s

Associated Function
1. Survey employee wellness

Observation (Insight)
If employers only measure physical factors, they may not be getting a full picture of the wellness of their employees.

Extension (Insight)
As employers try to find out the health and wellness level of their employees, they must focus on more than just the standard physical factors that are measured such as weight, height, and blood pressure. These factors are important to include along with self-reports about current health problems and chronic conditions, but must not be the sole measure of wellness.

In 1948, in its constitution, the World Health Organization (WHO) defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” In more recent years, this statement has been modified to include the ability to lead a “socially and economically productive life.”

Employers need to collect qualitative data about an employee’s psychological, material, and social well-being which may include information about work and home life, as well as personal values, beliefs, and attitudes in order to get a full picture of an employee’s wellness. This information in combination with physical factors will give a more accurate measure of an employee’s wellness.

Design Strategies (Ideas)
Include qualitative and quantitative measures
Combine physical, emotional, and social factors
Gather quantitative data through self-report of wellness
Gather qualitative data

Solution Elements (Ideas)
Status: E Existing M Modified S Speculative

Total Wellness Record
Total Wellness Survey
Personal Health Reader

Version 2 Date: 12 October, 2007 Date of first version: 2 October, 2007
**Design Factor**

**Title:** Issues relevant to individuals overlooked

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**Observation (Insight)**

If employers are using a standard set of factors to find out the wellness level or level of health care knowledge of an employee, they may be measuring areas which are not relevant to the individual.

**Extension (Insight)**

Individuals have different ideas about health and wellness, so the level of their health knowledge should be determined by a personal set of values. In addition, individuals have different needs based on health risks, family history, demographics, education level, and many other factors.

If factors are not measured that are relevant to the individual, important issues may be overlooked that could significantly improve the health of the person. For example, a person in a high-stress job could have a high level of knowledge about healthy food and diet and appear to have good health knowledge, but may not know about the effects of stress on their heart. This would be highly relevant for them. Factors that are specific to the individual need to be considered in measuring health and health care knowledge.

**Design Strategies (Ideas)**

- Include subjective measures
- Use demographic information to customize
- Weight measures and outcomes by a personal set of values
- Find areas of concern for employees

**Solution Elements (Ideas)**

**Status:**
- E Existing
- M Modified
- S Speculative

- S Value Filter
- M eHealthCommunity

**Contributors**

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The Employer Role

Rethinking – Design Thinking – Health Care

Collecting Information

Amber Lindholm

If employers are to measure productivity in order to assess the effectiveness of health programs, there should be some standard productivity measurement guide or best practices guide.

Employers use various methods to measure productivity including interviews, surveys, activity logs, and server logs. Employee activity logs can measure the task time and frequency, and manually record activities. Server logs automatically measure data such as frequency and duration of application usage. Some methods are qualitative, while others are quantitative.

Some employers invest time and money to field observation studies and lab studies to determine the appropriate methods for their employees. This type of information could be extremely valuable for other employers, particularly smaller companies that don't have the same resources to develop the best productivity measures.

Employers should have a way to compare health programs and the results through some standard measure. Productivity is the logical choice because it is already an important factor for employers to measure and is something they have the right to measure.

Establish standardized, job-specific productivity measures

Designate standardized productivity scale

Measure employee’s change in productivity

Productivity Guide

Productivity Scale

Productivity Index
**Design Factor**

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<td>Amber Lindholm</td>
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**Title:** Proper measurement tools not available

**Contributors**

**Observation (Insight)**

If employers want to properly measure the quality of their work environment, they need a comprehensive set of tools.

**Extension (Insight)**

Employers need a proper way to measure different aspects of workplace quality. Air quality, water, lighting, ergonomics and support space, noise, privacy, safety, and food quality should be measured. To truly evaluate the quality of the workplace these, as well as other unknown variables, must be measured. Because some variables may be more important than others, different weights should be given to the measurements according to the values of the employees.

In addition to having a set of tools, the employer needs a way to measure on an ongoing basis, to store the data, and to evaluate that data. The tools should be very easy to install and use, and should have very little need for expert interpretation.

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<th>Design Strategies (Ideas)</th>
<th>Solution Elements (Ideas)</th>
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</thead>
<tbody>
<tr>
<td>Use passive techniques to collect data</td>
<td>S EnviroGrab</td>
</tr>
<tr>
<td>Measure quality based on employee feedback</td>
<td>S Workplace Diagnostic</td>
</tr>
<tr>
<td>Weight measures based on employee values</td>
<td>E Work and Well-Being Assessment</td>
</tr>
</tbody>
</table>

**Version** 2  
**Date:** 12 October, 2007  
**Date of first version:** 11 October, 2007
**Design Factor**

| Project | Rethinking—Design Thinking—Health Care  
The Employer Role |
<table>
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<tr>
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<tbody>
<tr>
<td>Activity</td>
<td>Collecting Information</td>
</tr>
<tr>
<td>Originator</td>
<td>Amber Lindholm</td>
</tr>
<tr>
<td>Contributors</td>
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</tbody>
</table>

**Observation (Insight)**

If properly trained staff are not available to evaluate data used to monitor employees’ health or to assist in monitoring health, then the measurements may be incorrect.

**Extension (Insight)**

Employers may want to provide assistance to employees to manage and track their own health status. Employers may also want to monitor employee health more closely to assist in the company’s evaluation of health benefits or wellness programs. In order to do this accurately, the data that is being collected must be at a certain level of integrity that employers themselves may not be able to maintain.

Part of what is necessary for monitoring is collecting quantitative, official data such as the information that comes from an individual’s health check-up with their doctor. Certain physical factors must be measured accurately, recorded, and evaluated to give a complete picture of an individual’s health.

While it is not necessary or even wise for an employer to have access to an individual’s specific health information, it is necessary for the employer to have some form of aggregated data that gives them an overall picture of company health. This information must come from an accurate source.

<table>
<thead>
<tr>
<th>Design Strategies (Ideas)</th>
<th>Solution Elements (Ideas)</th>
<th>Status: E Existing M Modified S Speculative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bring in outside medical staff</td>
<td>M Check-up Days</td>
<td></td>
</tr>
<tr>
<td>Use equipment or tools only, no humans</td>
<td>M MiniClinic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S Health Station</td>
<td></td>
</tr>
</tbody>
</table>

**Version** 2  
**Date:** 12 October, 2007  
**Date of first version:** 11 October, 2007
If employees can see no personal or societal benefit for disclosing certain private information, then they may be unwilling due to privacy concerns or potential discrimination issues.

Many employees may not be willing to give out health information because misuse of health data can have a negative impact on the individual. To be fired, or not hired or promoted, because of an uncontrollable health condition, or even a controllable one, can be traumatic.

According to the National Consumer Health Privacy Survey 2005, 67% of national respondents are concerned about the privacy of their personal medical records, 52% fear that their health insurance information might be used by employers to limit job opportunities, and only 30% are willing to share their personal health information with health professionals not directly involved in their case.

Despite these concerns, a majority (59%) of consumers report that they would be willing to share personal health information if it would help advance health care. If employers can build trust with their employees and ensure that the information is safe and being used for a good benefit, it will increase the likelihood that employees will disclose personal information.

Education employees about
the benefits associated with
the released information

Educate employees about privacy regulations

Educate employees about the security of the information

Educate employees about
the benefits associated with
the released information

[5] TrustBuilder

Version: 2
Date: 12 October, 2007
Date of first version: 10 October, 2007
Title: Employees unmotivated to provide necessary information

Observation (Insight)

If employees can see no personal or societal benefit for disclosing or recording information, then they may be unmotivated to provide the information.

Extension (Insight)

Employees may be unmotivated to provide the necessary information about their participation in internal health programs for a number of reasons: they may not see the value in it, they may not have the time to do it, or they may not care.

If employees cannot readily see value or reward in participating in a program, they will likely not be interested in adhering to that program. Employees may need to see value in the form of health improvement or monetary savings or rewards.

The additional stress on employees by constantly providing detailed health information to their employers may cause participation to dwindle. Showing value to the individual and reducing the amount of time needed to participate will help to motivate employees.

Design Strategies (Ideas)

- Provide personalized incentive program
- Show individual health value
- Simplify information collection

Solution Elements (Ideas)

- My Health Rewards
- Benefits Meter
- Health Smart Card

Status: E Existing, M Modified, S Speculative

Contributors

Amber Lindholm

Date of first version: 11 October, 2007

Date: 12 October, 2007
**Design Factor**

**Title:** Qualitative data may be lost

**Source/s**

Personal observation

**Associated Function**

8. Survey employee satisfaction with all health benefits

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**Project**

Rethinking—DesignThinking—Health Care

**Activity**

Collecting Information

**Originator**

Amber Lindholm

**Contributors**

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**Observation (Insight)**

If an employer gathers satisfaction data through traditional survey means, they may miss important qualitative data.

**Extension (Insight)**

When an employer measures employee satisfaction of different types of health care benefits, they may need to look beyond standard surveys to obtain an accurate satisfaction measure. For instance, merely asking an employee to rate different benefits with a number score may give an easily quantifiable satisfaction score, but may not give an accurate picture of what employees really think about their health benefits.

Important information specific to the individual needs to be captured in some form in order to provide feedback on different health care benefits. An employee may need a channel to communicate his/her satisfaction that gathers more information than just a satisfaction rating. For example, they may be satisfied with their health plan in an overall sense, but may have one particular area of concern that is specific to their individual needs. Capturing these details is important when surveying employee satisfaction.

---

**Design Strategies (Ideas)**

Collect unprompted comments and criticisms

Collect face-to-face data

Try to quantify data

**Solution Elements (Ideas)**

Status: E Existing  M Modified  S Speculative

S eHealthBox

S Satisfocus Workshop

S Rate-your-benefits

---

**Version** 2  **Date:** 12 October, 2007  **Date of first version:** 11 October, 2007
Observation (Insight)

If employees pay for medical expenses from a variety of sources, then it may be difficult for them to keep track of exactly how much money they are spending on their health.

Extension (Insight)

Employees may pay for their medical costs from a variety of sources and accounts, which may include a Health Savings Account, a credit card, cash, or check. They may have trouble keeping track of all of their expenses if they don’t use a single account, and may not even be aware of how much money they are spending on health care.

Employees also may not know exactly what items should be considered health care costs and may have difficulty separating these expenses from their other expenses. Keeping track of health care expenses may not seem necessary if many of the expenses are paid for by the employer, so employees may not be motivated to do so. If the health care system continues to move in the direction of more consumer-centric health care, however, individuals will need to have better methods to track and understand their health care expenses.
### Observation (Insight)

If an employer evaluates the relationships of health, work environment, and productivity, they may find it difficult to correlate the relationship.

### Extension (Insight)

Employers may use many tools to assess the effectiveness of their health care benefits. For instance, they may measure the health status against the work environment quality or the productivity of an individual against their health status. Understanding that these different factors affect each other is one step in evaluation, but actually seeing that relationship to health may be very difficult.

Finding a correlation to health based on an individual’s information or over a short time period may not be the best way. For instance, an individual may have low productivity due to many outside factors not related to health, such as distraction by another coworker, daydreaming, or searching the internet. In a similar fashion, assessing the impact of the work environment on an individual’s health may be clouded by other factors.

Employers may find correlation very difficult if they are only looking at specific instances of data, at specific individuals, or over short periods of time.

### Design Strategies (Ideas)

- Assess relationships over a long time period
- Assess data from entire company

### Solution Elements (Ideas)

- WorkHealth Evaluator

- Status: **E** Existing  **M** Modified  **S** Speculative

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**Title:** Correlation to health uncertain

**Source/s:** Personal observation

**Associated Function:**
11. Assess effect of work environment on health
12. Evaluate employee health and productivity relationship
Although employers are aware that the indirect costs associated with health care may be very high, they have difficulty quantifying the impact and actual cost to their business.

Studies have found that the indirect costs of poor employee health have a huge impact on the company’s total health care costs. Indirect costs are defined as absenteeism and lost productivity due to people working at less than full capacity; direct costs are defined as money spent on doctor visits, hospital stays, surgery, medication, etc.

Other indirect costs to consider are morbidity costs, quantified by computing the earnings lost by people who are unable to work because of disease, and mortality costs, the aggregate of the present value of future earnings foregone because of premature deaths.

The combination of all of these indirect costs is huge. In fact, when indirect costs are combined with direct costs the impact is four times greater than direct costs alone. (JOEM)

Although employers realize that indirect costs have an economic impact, questions are still unanswered about the best way to measure the gains and costs in a manner that helps decision makers analyze the consequences of their health investment decisions.

**Design Strategies (Ideas)**
- Establish method guidelines
- Provide cost tracking tools
- Create cost/benefit analysis

**Solution Elements (Ideas)**
- HR Health Cost Guide
- ProductoLog
- HR Health Cost Tracker
- HR Health Benefits Results Indicator

**Source/s**

**Contributors**
Amber Lindholm

**Date of first version:** 12 October, 2007
Observation (Insight)

If employers assess wellness programs using the wrong methods, the results may not be relevant to the employee population.

Extension (Insight)

In order to provide wellness programs that are relevant to an employee population, employers must evaluate and assess the program effectiveness. Because there are many types of wellness plans and methods to evaluate them, it may be difficult to choose the right one. Employers may miss great opportunities to improve employee health if they do not evaluate correctly.

Employers should use the health risk data of their employee population to not only initiate, but also to evaluate various wellness programs. These programs should be geared toward addressing the health risks in the population, and the employer should have evaluation tools that can measure the program’s effect on lowering those risks.

For instance, an employer might have a great weight management program with excellent results, but the employee population might have started with a low number of people that are overweight and may not have such a great need for this program. Conversely the employer may not have a smoking cessation program, but many smokers. The wellness programs should be evaluated based on their effectiveness to lower the largest health risks that directly correspond to the employee needs.
### Observation (Insight)
If employers rely on plan utilization trends to determine future needs, they may be missing important data that would help improve their health benefits.

### Extension (Insight)
Employers may rely on the current plan utilization data that they receive from health plans to help understand the needs of their employee population. While this might give a decent picture of the health status and needs of employees, it does not find the true reasons for usage or lack of usage. It also does not allow an employer to plan for future needs.

Employers need to understand different situations such as the following: an employee is using certain parts of their health plan and not others, an employee elected certain coverage over another coverage, and an employee chooses not to have coverage at all. The underlying reasons for the choices may reveal latent needs that the employer is not meeting in their health benefits options. It may reveal problems in understanding the benefits, lack of financial resources to utilize certain options, or even overly unnecessary benefits that employers should trim from their offerings.

### Design Strategies (Ideas)
- Track decision-making strategies
- Communicate with uncovered employees
- Survey employees about usage patterns

### Solution Elements (Ideas)
- Choose-your-own-health-benefits
- Why Not? Survey
- MediReceipt

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**Version**: 2  **Date**: 12 October, 2007  **Date of first version**: 11 October, 2007
### Design Factor

**Title:** Important relationships overlooked

<table>
<thead>
<tr>
<th>Project</th>
<th>Rethinking–DesignThinking–Health Care</th>
<th>Activity</th>
<th>Assessing Information</th>
<th>Originator</th>
<th>Amber Lindholm</th>
<th>Contributors</th>
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</thead>
</table>

**Source/s**

**Associated Function**
16. Analyze health claims data

### Observation (Insight)
If employers are trying to improve their health benefits by analyzing health claims data, they should have a comprehensive method that includes an analysis of concurrent medical issues.

### Extension (Insight)
Employers use insurance claims data to help them better understand their employee population and plan for better health care. Employers can find out how much money is being spent in various areas, which are the most commonly used services, and how often employees are utilizing different services. But employers can do more with this information; this data can also be used in conjunction with patient reports to develop more targeted health programs.

Employers should use the data to compare their claims rates with national averages to understand if their employee population has different needs and to help identify areas of concern. Employers will be able to see how their employee health compares and if their employees are investing in appropriate preventive care. For example, the employer can see if the percent of females receiving mammograms is below the recommended medical level. In addition, they should utilize medical knowledge to identify claims that should occur with other claims but are not. For example, a person with claims related to diabetes should also have claims related to eye exams. This information can help employers pinpoint areas that need further health education.

### Design Strategies (Ideas)
- Use problem-focused analysis
- Evaluate employees against other claims analyses results

### Solution Elements (Ideas)
- Status: **E** Existing
- **S** Relata-claim
- **S** Claims Ruler

Version: 2 Date: 12 October, 2007 Date of first version: 11 October, 2007
The Employer Role

Rethinking – *Design Thinking* – Health Care

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**Activity**

Assessing Information

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**Originator**

Amber Lindholm

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**Source/s**

Personal observation

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**Title:** Important assessment factors not available

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**Associated Function**

17. Assess cost burden to individual

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**Observation (Insight)**

If an employer need to understand the cost burden of health care to an individual, they have to look at more than just out-of-pocket expenses.

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**Extension (Insight)**

In order to understand the cost burden of health care costs on an individual, many factors would have to be assessed. Total health care costs would need to be evaluated against the total household income data. Other expenses that an individual has would have to be taken into account as well such as mortgage, child care costs, monthly household bills, and credit card debt. This would only be valid if the employee kept careful track of all of their expenses.

In addition, employers may not be able to truly understand the cost burden of health care because the data necessary would be extremely private. They may still be able to understand the level of the cost burden if it is submitted by the individual as a number or percentage that does not include the details. For instance, the employee might have a cost burden level that corresponds to a certain percentage of their total income being spent on health care. It would not give details of the costs, cost level, or income.

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**Design Strategies (Ideas)**

Provide tool for employee to compare costs

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**Solution Elements (Ideas)**

Status: E Existing  M Modified  S Speculative

S Health Cost Pie

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**Version** 2  Date: 12 October, 2007  Date of first version: 11 October, 2007
### Title: Outlying cases are overlooked

#### Activity

**Assessing Information**

#### Originator

Amber Lindholm

#### Contributors


#### Design Factor

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<tbody>
<tr>
<td>Source/s</td>
<td>Personal observation</td>
</tr>
<tr>
<td>Associated Function</td>
<td>19. Evaluate employee health results</td>
</tr>
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</table>

#### Observation (Insight)

If an employer only aggregates the health status information of its employees, then cases needing special attention may be missed.

#### Extension (Insight)

In order to evaluate the effectiveness of their health benefits, employers may look at the overall picture of their employee’s health. By analyzing a mass of various data, they may find that the employee population is generally healthy and that their programs are effective. By aggregating all the employee health status data, employers may miss employees whose health is outside the average. While it may be difficult to get a closer look at individual employees because of privacy concerns, employers may overlook employees that have a strong need for case management of their health issues.

Employers should be able to identify an employee whose health is significantly outside of the mean range of the total health population. This employee may need case management from multiple parties or special programs to assist in their health care. Also, someone who is undergoing complicated surgeries or visiting multiple specialists may need additional assistance navigating aspects of the health care system. Employers can significantly reduce costs by proactively seeking out areas of concern.

#### Design Strategies (Ideas)

- Analyze health data to identify high-risk cases
- Designate employees that may require case management

#### Solution Elements (Ideas)

- Red Flag Health Watch
- Red Flag Health Case

#### Status:

- **E** Existing
- **M** Modified
- **S** Speculative

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**Version 2**  
**Date:** 12 October, 2007  
**Date of first version:** 2 October, 2007
### Design Factor

**Title:** Wrong metrics used

<table>
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<tbody>
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<td>Rethinking – <em>DesignThinking</em> – Health Care</td>
<td>20. Evaluate quality of health plan</td>
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<td>The Employer Role</td>
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<table>
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<tr>
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<th>Observations (Insight)</th>
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<tbody>
<tr>
<td>Assessing Information</td>
<td>If an employer bases health plan evaluations merely on cost and health outcomes, then the evaluation may not be entirely effective.</td>
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<table>
<thead>
<tr>
<th>Originator</th>
<th>Extension (Insight)</th>
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<tbody>
<tr>
<td>Amber Lindholm</td>
<td>Employers have great reasons and needs for performing proper evaluations on their health plan’s performance. Because the cost of health insurance is great and the cost of poor health has a large negative financial impact on employers, it is in their best interest to have a thorough evaluation of their health plan. While employers understand the need to look at the costs and the health results, they may not factor the employee satisfaction into the evaluation. The employees themselves are the end user of the health plan services, and their satisfaction should be part of the evaluation of the health plan. Without some additional metrics, an employer may not see a true evaluation and may not be providing a quality health plan to their employees. In addition, the health plans may only see the employer rather than the employee as the customer. By allowing employee feedback to play a role in evaluation, the health plan will find it in their best interest to focus on the individual satisfaction of their plan members.</td>
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<tr>
<th>Contributors</th>
<th>Status:</th>
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<tr>
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<td>Allow employee input to play a role in the evaluation</td>
<td>S Health Plan CommuValuator</td>
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**Version:** 2  **Date:** 12 October, 2007  **Date of first version:** 2 October, 2007
### Design Factor

#### Title: Information disclosure standards unclear

### Project

Rethinking—DesignThinking—Health Care

The Employer Role

### Activity

Communicating Information

### Originator

Amber Lindholm

### Contributors

If an employer communicates information about their health benefits offerings and performance to the public, they may be unsure of which information to provide and what the best means is to provide that information.

Employers should have a way to communicate information about their health benefits offerings, costs, and results to the public. This information is valuable to employees searching for new jobs and for the government to understand trends in health care and coverage. While employers might want to share this information, they may not have a good place to do so besides their own company website.

In addition, even if some information is available, it may not be the right information or it may not be available in a way that allows comparison or assessment. Employers need to provide certain standard information such as company demographics (industry, location, number of employees) to allow any sort of comparison of offerings.

Employers also need an easy way to disclose and update the necessary information. They may necessitate the creation of a standard protocol detailing which information is essential to provide and which information is additional. This data should be easily searchable and understandable by the public.

### Design Strategies (Ideas)

- Designate company demographics through data tagging
- Query employer databases for necessary information
- Guide employers through process of data input

### Solution Elements (Ideas)

- Company Key
- Health Benefits Inquirer
- HR Reporting Tool

### Associated Function

- Publish comprehensive health benefits offerings
- Report employee coverage and usage
- Disclose health care financial data
- Publish employee overall satisfaction results
- Release overall company health status

---

Version 2  Date: 15 October, 2007  Date of first version: 11 October, 2007
If an employer has a successful wellness program, they may not see the benefits of releasing that information to other companies.

Employers implement wellness programs for a number of reasons including lowering health care costs, retaining workers, and increasing productivity. Because of the financial implications, a successful wellness program may give a company a financial edge over its competitors. It may be difficult to get employers to release details about their wellness program because of this proprietary information or the fact that they paid for the information in the first place.

Although it may be difficult to provide, wellness program information is a valuable resource for other employers to have access to and is a great way for those with fewer resources to see “best practices” for wellness programs to aid in their own program implementation. In order to get employers to provide this information it may be necessary to provide them with benefits. This could come in the form of financial reward to the top wellness programs either from other companies as a whole, health plans, or another entity.

Provide a subscription-based platform for disclosure of wellness program information

Wellness Success Bulletin

Status: E Existing  M Modified  S Speculative
If employers have gathered information about gaps in the health literacy of their employees, they may not know how to communicate it to benefit the public. According to Healthy People 2010, a government initiative, health literacy is defined as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.” Because of their close contact, employers are in a great position to evaluate and communicate the health literacy of their employees.

While employers may have a lot of data about health literacy that is helping their own internal evaluation and implementation of various health benefits, they may also want a way to communicate this information to the government. This would allow the government to assist in various programs and outreach that would help not only the employees, but also the employers. It would allow less reliance on the employers for certain aspects of health management and would help show trends in health literacy that may need more serious research.
### Design Factor

**Title:** Employee might not want to share their information

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Activity</td>
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<tr>
<td>Originator</td>
<td>Margaret Jung</td>
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<td>Contributors</td>
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#### Observation (Insight)

Because of privacy issues and concern of discrimination in the work place based on health status, employees might not want to share their health care information with their employers.

#### Extension (Insight)

There is the possibility that employees may be concerned about their privacy and discrimination if they disclose their information to their employers. One of the reasons is the absence of guides to collect information and to treat the information. In order to protect the employee’s privacy and assure there is no discrimination at work, information collecting should be done in a carefully designed way. Additionally, the purpose of collecting an employee’s information should be clarified and usage of the information also has to be notified before it is collected.

#### Design Strategies (Ideas)

- Clarify the purpose of collecting information
- Clarify the usage of collecting information
- Limit level of access authorization to information
- Gather data in secure way

#### Solution Elements (Ideas)

- **E** Employer Associate
- **S** Data Allowance Limiter
- **S** Info Collecting Qualification

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**Date of first version:** 2 October, 2007
Design Factor

Title: No limits to what questions to be asked

Project
Rethinking—DesignThinking—Health Care

The Employer Role

Activity
Collecting Information

Originator
Margaret Jung

Contributors

Source/s
Team deliberations

Associated Function
32. Collect employee out-of-pocket expense
30. Collect employee health plan satisfaction
35. Gather employee’s rehabilitation cycle and expense

Observation (Insight)

There is no standard way of collecting information in the current health care system. Without appropriate collecting method, unnecessary questions could be asked and eventually it will be useless data.

Extension (Insight)

Based on the need and purpose, the information should be collected. In order to get valuable answers, there should be some guidelines to get right ones. Without the guidelines, the collected data might be useless or might raise questions that are not relevant to the purpose. It can lead to invading the privacy of the employee.

Design Strategies (Ideas)

Standardize the questions according to needs

Limit authorization level of collecting information

Gather data in secure way

Solution Elements (Ideas)

Status: E Existing M Modified S Speculative

S Questionnaire Builder

M Health Research Center

S Info Bank

Version 2 Date: 11 December, 2007 Date of first version: 2 October, 2007
Lack of standard collecting methods on health care information might lead to confusion. The speciality of some information necessitates a qualification system.

Health care is one of the most complex industries. There are several industries related to this area. There are several kinds of information regarding an employee’s health care. Some of them might require professional knowledge in order to understand it, such as an employee’s rehabilitation cycle or pattern. There is some information that should be understood as a whole picture, such as employee out-of-pocket expense pattern. This information is valuable to a specific group and is part of an employee’s private information. Thus, qualification systems should be limited based on needed employee information.

Design Strategies (Ideas)
- Limit authorization level of collecting information
- Specify information needed according to their needs
- Gather data in secure way

Solution Elements (Ideas)
- M Health Research Center
- S Rehabilitation Support
- S Info Bank
### Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Source/s</th>
<th>Associated Function</th>
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| Rethinking—DesignThinking—Health Care | Team deliberations | 32. Collect employee out-of-pocket expense  
| The Employer Role |                     | 35. Gather employee’s rehabilitation cycle and expense |

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<th>Activity</th>
<th>Observation (Insight)</th>
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<tbody>
<tr>
<td>Collecting Information</td>
<td>Lack of standard way of collecting information is Without appropriate collecting method, it might be useless data.</td>
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<tr>
<td>Margaret Jung</td>
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### Observation (Insight)

Lack of standard way of collecting information is Without appropriate collecting method, it might be useless data.

<table>
<thead>
<tr>
<th>Extension (Insight)</th>
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<tbody>
<tr>
<td>Even though carefully and well planned questions are asked, if answers from people are not accurate or inconclusive, the data will be useless. These results may occur because of misunderstanding about the question or it did not cover all the people who should answer it. There should be guideline to employee about the question in order to get valuable information.</td>
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### Design Strategies (Ideas)

<table>
<thead>
<tr>
<th>Specify definition of terms related to questions asked</th>
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<tbody>
<tr>
<td>Provide easily accessible information for better understanding of health care</td>
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### Solution Elements (Ideas)

<table>
<thead>
<tr>
<th>Status:</th>
<th>eHealth Encyclopedia</th>
<th>Healthcare Q&amp;A</th>
</tr>
</thead>
</table>

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Version 2 Date: 11 December, 2007  
Date of first version: 2 October, 2007
**Observation (Insight)**

Because of standardized guidance in collecting information exits misinterpretation might occur while they collect information from employees.

**Extension (Insight)**

Even if good quantitative and qualitative surveys and questionnaires are given to employee in the process of collecting, employees who provide information should understand clearly what they are asked. Without common knowledge of terms, confusion will continue to occur. It will lead to a compilation of incorrect facts and useless data.

**Design Strategies (Ideas)**

- Unify and disseminate health care related terms and knowledge
- Provide health care information for employee’s better understanding

**Solution Elements (Ideas)**

- eHealth Encyclopedia
- eHealth Reports

**Source/s**

Team deliberations

**Project**

Rethinking – DesignThinking – Health Care

**Activity**

Collecting Information

**Originator**

Margaret Jung

**Contributors**

**Title:** No guideline to keep employee unbiased

**Associated Function**

- 30. Collect employee health plan satisfaction
- 33. Survey employee ideas for new health plan options
- 36. Gather data of employee’s knowledge level of self-health management
- 38. Survey employee’s criterion to choose provider and supplier

**Contributors**

Margaret Jung

**Date of first version:** 2 October, 2007

**Date:** 11 December, 2007
Observation (Insight)

Some information might require physically collecting information staff or certain level of professional knowledge might needed. But no systematic way of collecting information is setted in current health care system.

Extension (Insight)

There are several ways to collect information. Due to the variety of information and people who provide the information, some could be collected electrocally and others might need to be collected physically. Some information needs certain level of professional knowledge to treat it. Thus, it requires some staff with qualified knowledge to handle the information.

Design Strategies (Ideas)

Survey with designated staff

Provide health care information according to individual needs

Solution Elements (Ideas)

Status: E Existing M Modified S Speculative

S Health Hub

S Personal Health ID card

Title: Specially trained staff is needed

Associated Function

37. Assemble information on employee health lifestyle

39. Collect uncovered employee information
Due to no confirmed way of collecting information, the means may vary. The outcome can be altered depending on the ways of collecting.

Useful information for health plans from employees are various. Collecting all information using the same methods can lead to incorrect outcome. This type of information will include facts about employee health care such as out-of-pocket expenses and rehabilitation cycles. There is some information employers would not be able to measure objectively. Like questions about an employee’s health plan satisfaction and ideas of new health plan options.

Depending on the kinds, quantity, and quality of information, the collecting methods may need to change for accurate measurement.
Lack of data standard methods, it might not be able to contact all people who are included in target user.

In order to thoroughly cover the data which was aided to collect, two things should be guaranteed. The first thing is that making sure everyone turns in their answers. It needs to give motivation or concrete purpose to the participants. The second one would be going over what and whose should be collected.

Promote information submitting
Check which information is collected

Health Hub
Health Research Center
Observation *(Insight)*

The means of assessing information may vary, as there is no confirmed system. The outcome can be altered depend on the ways of evaluating.

Extension *(Insight)*

Depending on the kinds, quantity, and quality of information, the assessing methods may need to change for accurate measurement. For example, recognizing health plan usage trends requires the ability to recognize a pattern within whole picture. In case of summarizing employee satisfaction with health plans, the evaluator should be able to assess it in an unbiased way, because it is data of people’s opinion.
Because of specialty in the health care industry, some terms are not known to people. It may lead to confusion in the understanding their health status.

Without understanding the language, it will be hard to grasp the notion of what is being said and written. It is the same in health care system. The terms used in the health care system may be hard to understand for people. To make things worse, sometimes there are terms which actually indicate the same idea or thing, which increases the confusion. In order to make people understand clearly and create efficient communication with other stakeholders, there should be standard terminology that is easy to access.

Define the idea or thing in a standard terminology

Explain the terms in words that are easy to grasp

Publicize the standard terminology

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<thead>
<tr>
<th>Design Strategies (Ideas)</th>
<th>Solution Elements (Ideas)</th>
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<tbody>
<tr>
<td>Define the idea or thing in a standard terminology</td>
<td>eHealth Encyclopedia</td>
</tr>
<tr>
<td>Explain the terms in words that are easy to grasp</td>
<td>Questionnaire Encoder</td>
</tr>
<tr>
<td>Publicize the standard terminology</td>
<td>“Share the Info” campaign</td>
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</tbody>
</table>

Status: E Existing  M Modified  S Speculative
### Observation (Insight)

Distorted results may be caused by biased assessments. Keeping impartiality in the evaluating process is important.

### Extension (Insight)

Evaluating is the process of sorting out and summarizing. Without the correct filters, an evaluation will end up with distorted results. Thus, it should be filtered with impartiality. For instance, identifying employee’s preference or criteria for health care decisions should be done without any prejudice. The collected data of this information is mainly people’s subjective opinion. If the evaluator takes it as his opinion and assesses it with prejudice, there will definitely be incorrect results. Reading not only what they said about health plan, but also what it really mean should be read. If there is no guarantee it is assessed with the correct filters, the evaluator might provide biased results.

### Design Strategies (Ideas)

- Set standard terminology
- Study appropriate evaluating methods for various kinds of information

### Solution Elements (Ideas)

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<th>Status</th>
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<tr>
<td>E</td>
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<td>S</td>
<td>Questionnaire Encoder</td>
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### Design Factor

**Title:** No guideline on the way of evaluating

<table>
<thead>
<tr>
<th>Project</th>
<th>Source/s</th>
<th>Associated Function</th>
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<tbody>
<tr>
<td>Rethinking—DesignThinking—Health Care</td>
<td>Team deliberations</td>
<td>46. Identify employee’s criteria for health care decision</td>
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<tr>
<td>The Employer Role</td>
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<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>Assessing Information</td>
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<tr>
<th>Originator</th>
<th>Contributors</th>
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<tbody>
<tr>
<td>Margaret Jung</td>
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</table>

### Observation (Insight)

Due to no confirmed way of assessing information, the means may vary. The outcome can be altered depending on the ways of evaluating.

### Extension (Insight)

In order to evaluate some data there should be a standard or criteria to make judgement. Without the criterion, the consistent judgement in the evaluating process might not be guaranteed. It is a problem especially when assessing subjective data, such as an employee’s criteria for health care decisions.

### Design Strategies (Ideas)

- Study appropriate assessing methods for various kinds of information
- Set standards for evaluating
- Declare the evaluation guideline through reliable source

### Solution Elements (Ideas)

- Info Assessing Coordinator
- Evaluation equation
- Associative Magazine

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**Version** 2  
**Date:** 11 December, 2007  
**Date of first version:** 2 October, 2007
Lack of the standard way of assessing information, various methods may be applied. The outcome can be altered depending on the ways of assessing.

Evaluating is a process of filtering ideas. Even though there is good collected data, if it is not treated in a well assessing process the data will eventually turn out as distorted results. The right way to evaluate should be suggested. In the process of evaluation, it also should be sorting out the range. The range should be guided, too.

Study appropriate collecting methods for various kinds of information

Set standards for evaluating

Evaluation equation
### Design Factor

**Title:** Other employers might not want to collaborate

**Project**
Rethinking—DesignThinking—Health Care

**Activity**
Assessing Information

**Originator**
Margaret Jung

**Contributors**

### Observation (Insight)

Due to the different values of information employers might not want to share it with others. They might treat the information as their important asset.

### Extension (Insight)

Information is a type of assets employer has. Even though it is not directly related to what they make profit, any type of their information could be an indirect way to disclose their corporation. It could be a reason employers be afraid of sharing information. Especially the information related to employee’s health care could disclose the part of their expense. This definitely is not something employer want to happen. There should be guarantee to protect employers’ valuable information. Another important thing would be understanding the importance of sharing information for improvement in health care system. If employers understands this will promote other stakeholders to compete and improve value in long term, they might be able to decide sharing information with others easily.

### Design Strategies (Ideas)

- Educate the importance and benefits of information sharing
- Promote information sharing with others
- Assure how information is treated and used

### Solution Elements (Ideas)

- **E** Employer Association
- **S** Info Credit Rewards
- **M** Healthcare Bulleting Board

**Source/s**
Team deliberations

**Associated Function**
47. Collaborate with other employers to create health plan evaluation

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**Contributors**

**Version** 2  
**Date:** 11 December, 2007  
**Date of first version:** 2 October, 2007
**Title:** No standard system of sharing information

**Design Factor**

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<td>Team deliberations</td>
<td>51. Share collaborated health plan evaluation</td>
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<tr>
<td>The Employer Role</td>
<td></td>
<td>52. Share employee’s rehabilitation pattern</td>
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**Activity**

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<tr>
<th>Originator</th>
<th>Communication Information</th>
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<tr>
<td>Margaret Jung</td>
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**Contributors**

<table>
<thead>
<tr>
<th>Observation (Insight)</th>
<th>Extension (Insight)</th>
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<tbody>
<tr>
<td>Due to no confirmed way of sharing information, the means may vary. The outcome can be useless data unless it is communicated in an effective way.</td>
<td>Even though information has been aggregated and evaluated with a suitable method according to it’s characteristic, without sharing system the data will be useless one. For transparency, collected data has to communicated with others in an effective way. But without standard system, it might not be able to used as it’s original value. There has to be standard system of sharing information.</td>
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**Design Strategies (Ideas)**

<table>
<thead>
<tr>
<th>Set standard way of qualified information collecting</th>
<th>Solution Elements (Ideas) Status: E Existing M Modified S Speculative</th>
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<tbody>
<tr>
<td></td>
<td>S Health Decision Standard Survey</td>
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<tr>
<th>Identify authorized way to disclose information</th>
<th>E Health Plan Reports</th>
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<tr>
<th>Publicize the shared information through reliable resource</th>
<th>M Healthcare Bulleting Board</th>
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**Version** 2 **Date:** 11 December, 2007

**Date of first version:** 2 October, 2007
Lack of limits on communication can cause a communication problem. There is no guideline of what can be share and can not be share.

Transparency is needed for improvement in health care system. Information sharing will eventually lead to improved system. But what should be share has not been suggested. Information is part of employee’s privacy and employer’s asset, thus it should be treated carefully and effectively. Without this guideline, invading employee’s privacy or disclosing part of employers asset can happen. The guided.

Identify authorized organization to communicate

Provide guideline of communicating methods and means

Publicize the guideline for communicating
Design Factor

Title: No regulation on range of sharing information

Project
Rethinking – Design Thinking – Health Care
The Employer Role

Activity
Communicating Information

Originator
Margaret Jung

Contributors

Source/s
Team deliberations

Associated Function
51. Share collaborated health plan evaluation
52. Share employee’s rehabilitation pattern
52. Provide employee’s health lifestyle trend

Observation (Insight)
Due to no standard information communicating system, there is no regulation about range of information sharing

Extension (Insight)
Information sharing is important for promoting competitions. But all information is not the answer. Because of privacy issue to employee, there has to be regulation on range of information sharing. To employers the information can be considered as their asset, so employer also treats it as valuable thing. If limits of communication range are not guaranteed, employee and employer might not want to share their information even before it is collected.

Design Strategies (Ideas)
Set standards for evaluating range

Solution Elements (Ideas)
Info Evaluator

Publicize the guideline for communicating

Healthcare Bulletin Board

Version 2 Date: 11 December, 2007 Date of first version: 2 October, 2007
Because of subjectiveness of some collected data, there is no proof whether it is trustworthiness or not.

Collected data, especially a subjective data which could be satisfaction data and an idea for new health plan options, can be asked about it’s trustworthiness. Due to the characteristic of subjective data, people might not take it as partial data. Proof for objectivity of data should be added. It would be guarantee of partial process of evaluating and communicating among other stakeholders. Another helpful guide would be using authorized resource as mean to communicate.

**Design Strategies (Ideas)**
- Set standard system for objective evaluation
- Use authorized resource as mean to communicate with others

**Solution Elements (Ideas)**
- Info Evaluator
- Employer Association

**Observation (Insight)**
- The Employer Role
- Communicating Information
- Margaret Jung

**Extension (Insight)**
- 48. Provide employee satisfaction data
- 49. Provide employee demands for new health plan options
- 50. Provide employee preferences for health plan options

**Contributors**
Margaret Jung
When various surveys and tests are carried out, less than satisfying numbers of employees may submit their response for several reasons. Low response rate could substantially destruct the validity and effectiveness of the surveys and tests.

A common cause of a low response rates is that employees are not aware of or not well informed about the importance of health related surveys both to the company and to themselves. In this case, it is essential for the HR staff to inform or educate the employees about the benefit to complete the surveys and tests, clarifying that the surveys and tests are conducted for employees’ own benefits to understand their health; tests and surveys are the first and one of the most important steps for preventative care; providing the information could directly and potentially reduce both the cost of the employees and the health care expense of the company.

Another cause is that employees are reluctant to spend their work hours to deal with ‘irrelevant’ issues. In this case, it is important to justify the importance of taking surveys and tests. The HR staff should communicate with management to allow the employees to finish the surveys and tests in a dedicated period of time during the work days.

Also, incentives should be provided and emphasized. The surveys and tests should be included as an essential part of the health care benefit execution. The employees who complete the surveys and tests should be offered lower premiums or rewards points as incentives.

Another possible reason for low response rates may be that surveys and tests are designed in a boring or ambiguous way. Therefore, the surveys and tests should be readily accessible for all the employees, their covered dependents and covered retirees. Also, the surveys should be designed in an easy, interesting, engaging and unambiguous way and should be short enough.
Many employers collect employee data on-site. However, the data collected from retirees are often overlooked or ignored.

According to the Kaiser/Hewitt 2004 Survey on Retiree Health Benefits, ‘the vast majority of surveyed private-sector firms with 1,000+ employees that offer retiree health benefits provide coverage for both pre-65 retirees and age 65+ retirees (89 percent).’ The health care benefits provided by employers for retirees remains a primary source for their health care coverage. Employer plans remain the primary source of prescription drug coverage for seniors on Medicare. For retirees ages 65 and older, employer-sponsored plans help fill gaps that Medicare does not cover.

As reported by the Kaiser/Hewitt 2004 Survey on Retiree Health Benefits, the cost of retiree health care represents 29% of the total health care cost of the surveyed employers. And from the same source, 89% of the CEO’s are very or somewhat worried about the cost of retiree health care.

However, even though retiree health care costs remain a concern, the employers are not paying much attention to collect the health information needed to address this problem. Unfortunately, the retirees are clearly the group of people whose health status needs the most attention.

Since retirees are no longer in close contact with their employers, often times the collection of their health information is overlooked. Some employers do not include retirees in their company health checks, health surveys and so forth. Even if employers do offer retiree health checks that are carried out by local providers, the retirees may still not be able to attend. Offering online or mailed surveys may also be burdensome for retired employees.
**Design Factor**

**Title:** Hard to interpret employee reporting language

**Project**
Rethinking – DesignThinking – Health Care
The Employer Role

**Activity**
Collecting Information

**Originator**
Fei Gao

**Contributors**

**Source/s**
Team deliberations

**Associated Function**
55. Collect employee wellness data
57. Track employee mental health
60. Survey employee satisfaction of providers
62. Track patient recovery data

**Observation (Insight)**

Personal health reporting can be ambiguous when collected in a qualitative way. Lacking a common method for collecting qualitative data is problematic when providers try to compare wellness and satisfaction across employee groups.

**Extension (Insight)**

Personal language styles are different for each individual. In describing the same medical condition, different individuals may use completely different wording. Quantifying feedback is helpful, but it may not always be appropriate such as in cases when patient recovery and physical/mental health are being measured. Reading, interpreting, storing and analyzing qualitative feedback in these situations could be hard for those receiving the data, such as providers.

The severity of language is also different across individuals. This affects the validity of submitted feedback. Due to personality and other reasons, individuals tend to perceive the severity of their own health problem differently. Different perception of severity leads to biased, subjective ratings of physical and mental wellness. In order to better use the collected qualitative data, the subjective factor that inherently exists in the feedback must be removed.

**Design Strategies (Ideas)**

- Standardize the input at collection
- Interpret the natural language and standardize it

**Solution Elements (Ideas)**

- Wellnese
  - Status: E Existing
  - Status: M Modified
  - Status: S Speculative

- Medfolink
  - Status: M Modified
Privacy issues are always a concern when collecting employee health data. The concern exist for both the employer and the employee.

In April 2003, a new federal law to protect patient privacy came into effect. Pushed by Congress, the Department of Health and Human Services (HHS) developed this new national standard as a part of the 1996 Health Insurance Portability and Accountability Act (HIPAA). This act includes provisions designed to encourage electronic transactions and also required new safeguards to protect the security and confidentiality of health information.

Employers should comply with this law when collecting information regarding employee health. The access to personal health information should be strictly controlled during data collecting as well as subsequent data storage, assessing and transmitting. Employers and any other stakeholder must not use the data illegally without the authorization of the specific employee such as HR decisions. Data security is a primary concern for planning and designing data systems.

Ryan Armbruster of Mayo Clinic provided an interesting insight about employees’ concern of health privacy. According to Armbruster, the employees are concerned with their privacy not as much as people may presume. When employers provide substantial health benefits, the employee might be and were willing to disclose some of their health data. In other words, when the employees are aware that the disclosure of the health data might be good trade-off for their economic and most importantly physical and mental well being, the data collecting would be supported by the employees.
Design Factor

Project
Rethinking – Design Thinking – Health Care
The Employer Role

Activity
Collecting Information

Originator
Fei Gao

Contributors

Source/s
Team deliberations

Associated Function
59. Measure employee productivity

Observation (Insight)
Because of the varying job titles company’s have, the collection (as well as assessment and communication) of productivity data for each is difficult. Furthermore, the definition of productivity varies from company to company, as well.

Extension (Insight)
The American Heritage Dictionary defines productivity as the rate at which goods or services are produced especially output per unit of labor. Although economists and sociologists have argued about the definition of productivity, there is still no consensus.

When addressing productivity, quality factors must be measured. The quality of the work is an essential factor for productivity. When measuring the outcome vs. income rate, quality measures should have a substantial weight in calculating productivity. The weight given to quality depends on the nature of the job. Therefore, quality measurements must be collected before assessing.

The method for measuring productivity depends on the nature of a job. For some jobs, outcome per unit time period is extremely important, such as in manufacturing. While for other jobs, final results are more critical, such as in hospitals. Finally, qualitative and subjective measures are important for certain jobs. Not all jobs can be evaluated by purely quantitative measures. Some jobs create value by providing customer experience, and create future value for satisfied and engaged customers. The method to measure for each discipline should be adapted to the nature of the work.

Design Strategies (Ideas)
Measure quantitative data
Collect qualitative data
Define productivity per job title

Solution Elements (Ideas)
Productivity Pool

Status: E Existing M Modified S Speculative

Date of first version: 2 October, 2007

Version 2 Date: 12 October, 2007
When gathering data on medical related behavior, it is relatively easier for employers to implement on-site means, while off-site employee behavioral information is often hard to obtain if not impossible.

Although also largely reliant on self-report, the employers are more likely to track and record the on-site behavior of the employees regarding health. By mandating or providing incentive and dedicated time for self-reporting, the employees have more chance of submitting the needed information on-site. But when the employees are working off-site, on long vacation/leave or for retirees, the enforced means normally conducted in the workplace could not necessarily be carried out, or is not effective to provide enough motivation for off-site employees or retirees to comply.

Further, considering the privacy issue, most of the employees are less likely to be willing to disclose their off-site behavior even though the objective of the policy is for their own physical well-being. For this problem, the system should be designed in a way that all the data collected could only be fully accessed by employees themselves regardless of whether the data is collected on-site or off-site. Only employees themselves could give different levels of authorization to the physicians, nurses or other individuals and organizations for access to certain parts of the data. Employees must be clearly informed about this feature.

Also, for convenient access especially for off-site employees and retirees, the data collecting and self-reporting should all be conducted via internet. Real time or regular base interaction via internet or wireless device between employees and providers should be implemented in order to enforce off-site communication and self-reporting.

Means other than self-reporting should also be considered and developed to gather data.

Design Strategies (Ideas)
- Create off-site patient-physician interaction
- Invent new means of off-site data collection
- Create automated reporting of adherence

Solution Elements (Ideas)
- PPchat
- MediTwitter
- My-Pharmacist
Most of the health surveys and health screening are carried out annually, and some of them are even conducted biennially. In this way, the time interval between the surveys or tests is too long. For health surveys, annual collection is the normal frequency. The annual big picture of the national level health pattern and trends is clear and up-to-date enough to understand the long term trend and overall condition. It might be ok for information provided to the government or to the public. However, for the information provided to the providers, besides the trends and overall generalization, the information contains mostly detailed personal medical conditions. In this case, the frequency of annual collection is not enough to monitor and track the health status of the patient.

A simple obvious solution would be to test and survey multiple times per year. This solution may not be a good one, because it may consume too much time of the employee and may lower the productivity of the company by taking working time for orientation, survey or on-site screening. Also, multiple times of surveys and tests may add to the work load of the employees and somehow bore the employees and in turn lower the rate of employee participation in data collecting.

Clearly, other strategies should be considered to solve this problem. One possible strategy may be to develop new ways to collect information on a regular basis without much participatory effort of the employees. The other possible strategy would be to ask only a couple of questions multiple times through the year. This strategy could be combined with the annual survey and serve as a supplement for the main annual survey.
Qualitative data is as important as quantitative data, especially in the case of health. Most of the surveys and tests are good at collecting quantitative data while invaluable qualitative data is often overlooked or hard to collect.

Wellness is not only defined by quantifiable measures but also by the perception of the individual’s physical and mental well being. Inevitably, a big part of the self-evaluation of wellness is subjective. Nonetheless, qualitative data is important to indicate the health of an employee. Therefore, it is important to collect qualitative data especially when tracking patient recovery.

Furthermore, qualitative data is rich in content especially to describe lifestyle. Adding ethnography into the data collection would be extremely valuable when providers are studying patient lifestyles to give recommendations for preventative care or recovery guidance. Also, qualitative data about lifestyle is important to assess the potential risk of the employees for disease. Qualitative data study strongly supports the ‘health oriented’ care rather than ‘disease oriented’ care.

Provider satisfaction is another issue where qualitative data is needed to better understand patient needs. Ethnography should be used to study the patient cases to promote quality of care as well as improve patient experience with providers.

- Add qualitative section in surveys
- Create venue for provider-patient interaction
- Assign dedicated staff to collect qualitative data

- Quan-litative Survey
- Patient forum
- Insight Gatherer
Considering data standardization and cost, employers may conduct standardized tests and surveys to collect employee health data. But the identical surveys and test contents could not meet the diverse needs of different demographic groups of the employees.

It is very important in data collecting for health that the data collected, assessed, and delivered is standardized. A common standard has been advocated for a long time for the ease of outcome comparison and aggregation. Some employers have been using a simple, uniform survey to collect information on employee health. Although some of the health screening programs do offer different data gathering points across the employee demographic groups, it is believed that the diversity needs of the demographic groups is not well met.

The diverse demographics and background of the employees are essential in collecting information and are calling for a more flexible or more adaptive method in information collection. In health surveys, one new method to conduct adaptive tests and surveys is worth mentioning. The technology first developed for the need of various language skill tests is known as Computer Adaptive Testing (CAT). A leading institution dedicated in research of CAT health surveys is Health Assessment Lab (HAL).

Most of the data collecting efforts should consider adaptation to the special condition and health risk of different demographic groups. The questions of the survey and the content and focus of data gathering in health screening should be tailored to both the survey and test taker’s specific condition. For example, the lifestyle questions for a retiree should be different from the ones asked for a 20 year old, the health care knowledge questions for a diabetes patient should be completely different from the ones for a smoker.
Observation (Insight)

Performance of a specific provider or a specific medical condition is limited to simple statistics from the claims data. Full circle effects, indirect cost, and qualitative evaluation from the patient are usually overlooked.

Extension (Insight)

The performance of a provider or a specific medical condition treatment is usually assessed based on the data collected from the claims. Claims data does have some value in addressing the performance. However, the evaluation of performance is limited to statistics such as mortality rates, complications, access to appropriate health services, length of stay (duration of treatment), cost of care, and compliance to certain practice guidelines.

A lot of essential measures of performance is missing in claims data, such as the outcome/input rate, whether there were diagnosis errors, how much the biological measures of the patient improved, how did the symptoms of the patient lessened, how the quality of patient life improved, how much time is saved for future treatment, what is the long term effect for patient's health, how well the patient was educated for future self-care, whether the patient is satisfied with the treatment, etc.

For better evaluation of provider performance, more research needs to be done into the recovery period of the patient, and more data must be collected directly from the patient, both quantitatively and qualitatively. For these data collections, employers can help. Recover Master and Medifolink could be integrated. Indirect cost should be calculated by the employer. The intangible full cycle cost should be estimated, too.
Productivity must be quantified in a standardized way to enable comparison across employees from different disciplines and employers from different industries.

How productivity is defined is a per industry and per discipline issue, (See design factor extension: Hard to define productivity). Accurately assessing productivity is essential to properly evaluate the wellness of the employees, the performance of internal wellness programs, and the performance of medical treatment and preventative care delivered by providers.

It is important to integrate quality measures, quantity measures such as time spent, labor spent and revenue created, as well as qualitative evaluation from peers and front line managers. Each discipline should use different weights and standards to examine the different factors. Finally, a standardized equation for productivity should be given per job title. The formula will allow comparison across job titles and industries.
Productivity is a comprehensive outcome of multiple factors. Simple correlation of employee productivity and individual wellness is problematic.

Disregarding the issue of productivity measurement and assessment (see design factor Hard to quantify and standardize productivity and design factor Hard to define productivity), let's assume the assessing and measuring of productivity is accurate. However, using the 'raw' data of productivity to evaluate provider performance is problematic. For example, an employee who just had surgery may have significantly low productivity at the workplace. But the low productivity may not necessarily result from a bad treatment. It is possible that this employee was worrying about the relationship between he and his wife and his low productivity might not be caused by post-surgery difficulties at all.

All the factors that affect productivity and the influence should be noted, and other factors that influence productivity should be considered.

Study the influence of health factors on productivity

Study the influence of non-health factors on productivity

Provide health-adjusted productivity assessing

Health-Adjusted Productivity Index (HAPI)
Lack of a common standard which is at the same time easily understandable is problematic in assessing health outcome.

‘Quality of life’ which includes living environment, living situation and spiritual beliefs is a much broader definition of health and wellness. Although this definition is relevant to medical practices, it is too broad to measure and too vague to be directly linked with the assessment of performance of providers. The concept we are concerned about should be framed as ‘health-related quality-of-life’ (Kathleen N. Lohr, 1992). It is under consensus that health-related quality-of-life should include ‘physical functioning, mental and emotional well-being, social and role functioning, perceptions of health in general, pain, and energy and vitality’ (Kathleen N. Lohr, 1992).

Even within the frame of health-related quality-of-life, health is still an abstract concept rather than a tangible measurement; therefore, the assessment of health could never be ‘accurate’. The assessment of health could take form as an index combining generic clinical measurements and subjective based evaluation. The index of health status should be general enough to give an overview of the well-being of an individual, while at the same time being ‘accurate’ enough to understand the estimation of health.

Backed up by the detailed information in the database of health related information of each individual, general indices should be given to represent corresponding segments of health status, such as physical functioning, mental well-being, social functioning, subjective perception of health, etc. The indices for health status segments should be easily understandable and standardized.

Create easily understandable indices for each health status segment

Integrate existing database with survey data to generate more comprehensive assessment of health status

5 Scores of Health

Design Strategies (Ideas)

Solution Elements (Ideas) Status: E Existing M Modified S Speculative

Version 1 Date: 15 October, 2007

Date of first version: 15 October, 2007
There is no common standard to risk-adjust and to evaluate patient recovery. Provider, supplier, and health plan performance needs standardized recovery rating.

According to Porter’s view, risk-adjusted full-cycle outcome data is an essential element to enable value-based competition in the health care system. Patient recovery data is a main source of outcome evaluation. Physical check-up is needed as objective evidence of recovery. The standardization of recovery health check results is an involved, but necessary, process. As the other important factor, subjective feedback from patients is also necessary to evaluate treatment performance. Currently, questionnaires of satisfaction exist but are neither universal or standardized.

For evaluating each single kind of treatment, objective and subjective data should be combined in a certain way. For different treatment, different weight should be given to different measurement. The weight should be decided by experts or government institutions to develop a standardized protocol across the board. Risk-adjustment is also needed for different conditions of the patient. The recovery evaluation result per treatment should enable comparison across stakeholders to trigger competition.

**Design Strategies (Ideas)**

- Assess physical data and satisfaction at the same time
- Analyze qualitative data directly from patients

**Solution Elements (Ideas)**

- Recovery Master
- Input/Output of My Care
**Design Factor**

**Title:** Reason of disobeying recommendation ignored

**Source/s**


**Contributors**
Fei Gao

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**Observation (Insight)**

Although the adherence of prescription is measured, the reason why the employee failed to follow the recommendation may be ignored in data assessing.

**Extension (Insight)**

Poor adherence could have a lot of side effects. Mabel Chow tells us in the paper *Wharton Research Scholar Program, Project Proposal: Measuring Prescription Adherence for pharmaceutical Prescription Refills* that “Prescription Refills studies have shown that the consequences of poor adherence are poor health outcomes and increased health care costs. Furthermore, adherence is found to be the single most important modifiable factor compromising treatment outcome across diseases.” Just 51% of patients stick with their prescribed antidote; as few as 30% of teenagers correctly take drugs to prevent asthma attacks; 18% of kidney-transplant recipients weren't following instructions to prevent organ rejection; even doctors adhere to their own prescriptions just 79% of the time.

The reason for failure to follow the prescription “goes far beyond the issue of affording prescriptions. Often people misunderstand what they're supposed to take or how to take them. Or they forget doses. Or start feeling better and toss the rest of the bottle. Or skip doses for fear of side effects.” (Lauren Neergaard, 2007)

Poor medication adherence can cost an extra $2,000 a year for each patient in extra doctor visits alone, and it adds preventable hospitalizations and premature death. The report estimates that poor medication adherence could be costing the country $177 billion in medical bills and lost productivity.

The barrier of adherence must be addressed together with measuring adherence itself. Information about patient adherence behavior should be collected, assessed and communicated not only quantitatively, but also qualitatively. Insights should be drawn from the data in assessing.

---

**Design Strategies (Ideas)**

- Get into the field and ask the question
- Assess all the existing data

**Solution Elements (Ideas)**

- Insight Gatherer
- Dis-adherence Pattern Finder

---

**Version** 1  **Date:** 15 October, 2007  **Date of first version:** 15 October, 2007

---

The Employer Role
Rethinking – Design Thinking – Health Care
The Employer Role

---

**Activity**
Assessing information

---

**Contributors**
Fei Gao

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**Contributors**
Fei Gao

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**Contributors**
Fei Gao
Currently ROI of internal wellness programs is calculated more based on reduced absenteeism and medical cost. However, the return of the wellness program investment reflected in many more aspects that are not included in the calculation of ROI.

ROI of internal wellness programs is one of the most important measurement of the success of the program. It is important for employers to evaluate their wellness programs and also important for government and health plans to understand the wellness of the employees. ROI is usually calculated by the reduced absenteeism and reduced medical cost of the employer. The published ROI data shows that normally the return of investment on wellness programs is around 1.5 to 5 (median is about 3) dollars per dollar investment spent.

Effects of a wellness program for the most part goes far beyond reduced absenteeism and reduced medical spending. Besides the two aspects mentioned, a lot more “invisible” aspects do benefit from the influenced behavior of the employees by the wellness program. Examples are improved employee health, improved professional image, increased recruitment potential, increased productivity, improved morale, reduced turnover and so forth. All these aspects are strongly benefitting the bottom line of the employer and should all be considered when calculating the ROI of wellness programs.

However good the ROI on wellness programs are, up to 2006, only 20% of the employers offered lifestyle modification wellness programs. To further motivate employers, especially mid to small employers to join, the benefits of wellness programs should be clarified and should be more exposed to the attention of the management.

Therefore, a standardized, comprehensive way to calculate ROI should be created and advocated by employer groups, health plans, or recommended by the government.
### Design Factor

**Title:** Satisfaction not comparable across providers/employees

<table>
<thead>
<tr>
<th>Source/s</th>
<th>Associated Function</th>
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<tbody>
<tr>
<td>Team deliberations</td>
<td>72. Summarize employee satisfaction</td>
</tr>
</tbody>
</table>

#### Project
- **Rethinking – DesignThinking – Health Care**
- **The Employer Role**

#### Activity
- Assessing information

#### Originator
- Fei Gao

#### Contributors

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#### Observation *(Insight)*

Satisfaction of services and products offered by various stakeholders are an important measurement of their performance. However, there is no standardized common method across the board to collect, assess, and communicate satisfaction data.

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#### Extension *(Insight)*

In order to enable value-based competition, transparency of evaluation information is essentially important. In turn, in collecting and assessing performance of providers, suppliers, and health plans, patient satisfaction is representing the subjective side of the stakeholders’ performance. However, each health plan or each provider is using different methods to collect and assess patient satisfaction data. Therefore, it makes the comparison of patient satisfaction incomparable across the board. The incompatibility in turn fails the positive sum competition.

For each treatment, there needs to be a common standard for all the stakeholders and all the players in each category to collect, assess and communicate patient satisfaction. Standardization across treatments may not be necessary, because the most important competition, as described by Porter, happens on the medical condition level which means on the same treatments between providers.

---

#### Design Strategies *(Ideas)*
- Create common satisfaction survey standard

#### Solution Elements *(Ideas)*
- Status: **E** Existing  
- **S** Uni-Satisfac
Retiree and uncovered employee health care information is often times paid not enough attention to or even ignored by the employer.

Retiree medical expenses makes up to about 30% of an employer’s health care cost and is growing as the baby boomers begin to reach the age of retirement. For retirees, plan coverage cost keeps growing at a speed of double digits. According to Kaiser/Hewitt 2005 Survey on Retiree Health Benefits, the percentage of employers that are not offering retiree coverage is increasing while the ones that do offer coverage keep revising their policy of retiree coverage to shift cost to the retirees and to Medicare.

Although a big number of the employers are shifting cost of health care out, the importance of health and wellness of employees is increasingly gaining attention from the employers’ side. However, as the employers are putting more effort and investment into the health and wellness of on-site workers, retirees are somehow overlooked. While health plans are competing with each other in improving the health and cost efficiency of the covered patients, the uncovered population falls out of the improving system.

To better manage health care benefits, the employers must pay more attention and take more responsibility on not only treating the retirees but also on preventative care and maintenance of their health. Unlike the on-site workers, retiree data is much harder to collect. Some of the retirees move to other places to live and lose contact with the employer who is paying for the coverage. Data from the retirees should be collected. Communication between retirees and their former employers, providers, health plans, and suppliers should be established and maintained.

Insights from the uncovered employees should also be collected and communicated to the stakeholders, especially health plans.
While some of the first line staff of providers interact closely with patients and truly understand their problems, the policy makers of the providers are detached from the context.

Employers are with the patients on a day to day basis at the work place. Patients' problems before and after hospital visits are carefully collected and assessed. To bring the policy makers of the providers closer to the patient experience, the employers must adopt proper means to communicate the existing information to the correct audiences in the provider organizations.

Because the communication between patients and providers benefit both of the stakeholders, the effort must be made with joint force from employers and providers.

Last but not least, the communicated information of patient insights should focus more on the qualitative data than the quantitative. Qualitative data could best complement the knowledge of the policy makers of the providers. Holistic knowledge of the patients helps them make better decisions to cater to the needs of their customers.
### Design Factor

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The Employer Role |
<table>
<thead>
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<tbody>
<tr>
<td>Activity</td>
<td>Communicating information</td>
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<td>Originator</td>
<td>Fei Gao</td>
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<td>Contributors</td>
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#### Observation (Insight)

Lack of common protocols in communicating health outcome information prevents comparison across employers, providers, suppliers and health plans.

#### Extension (Insight)

For both self-evaluation of employers and evaluation of stakeholder performance, comparison across the board is the most important factor to enable and promote healthy competition. Currently, different players in each stakeholder segment use their own standard to survey satisfaction and communicate it separately using their own channels. Since the report is created by the stakeholder themselves, it is highly possible that the reports are composed in a way that hides the weakness of the stakeholder and emphasizes the strong side. Although stakeholders are communicating the outcome information, transparency is hurt if the reports are not standardized and managed by an impartial third party.

To support the patients to make evidence-based decision, the outcome information and satisfaction must be standardized to enable comparison. Also, the communicated information should be simple and easily understandable. The stated notion is applicable to various stakeholders in the health care field including the employers themselves.

J.D. Power and Associates is working toward this goal but the health care section is being built and has not yet reached a satisfying level of transparency and comprehensiveness.

#### Design Strategies (Ideas)

- Publicize employer self-evaluation of health care success

#### Solution Elements (Ideas)

- Health 500
- Consumer Report Contributor

<table>
<thead>
<tr>
<th>Source/s</th>
<th>Team deliberations</th>
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<tbody>
<tr>
<td>Associated Function</td>
<td></td>
</tr>
<tr>
<td>75. Provide patient lifestyle data</td>
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<tr>
<td>77. Provide patient recovery tracking data</td>
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<tr>
<td>78. Provide patient treatment adherence data</td>
<td></td>
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<tr>
<td>79. Provide employee physical/mental wellness evaluation data</td>
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<tr>
<td>81. Report employee satisfaction</td>
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</tbody>
</table>
**Observation (Insight)**

When communicating wellness and health data of employees, the contextual information is usually missing. The incomplete information could be misleading in evaluation of the effectiveness of the employers' wellness program.

**Extension (Insight)**

As the evaluation of the performance of the providers and health plans, the performance of the internal wellness programs should also be risk-adjusted. If not, the result could be misleading. For example, an employer may have very good outcome in the wellness program in terms of employee health, but that outcome may not be the result of a successful wellness program. It is highly possible that the employer has healthy employees when they are hired. On the other hand, a wellness program might be rated as poorly performed because of the bad health of incoming employees, despite the health improvement the employees have made.

To avoid this problem, the result evaluation of the wellness program should be risk-adjusted. Context of the employee health and demographic information should be provided, together with the performance evaluation of the wellness programs. Standardized method of risk-adjustments should be widely adopted by employers in assessing the success of the wellness programs. The result of the risk-adjusted wellness program performance should enable comparison across the board.

Improvement of health should be emphasized instead of the health outcome in addressing the effectiveness of wellness programs.

**Design Strategies (Ideas)**

- Risk-adjust the wellness program outcome
- Provide health related context together with outcome

**Solution Elements (Ideas)**

- Wellness & Context

**Status:**

- **E** Existing
- **M** Modified
- **S** Speculative

---

**Contributors**

- Fei Gao

**Source/s**

- Team deliberations

**Associated Function**

- 74. Provide current wellness program data

**Title:** Wellness program report detached from the special situation of each employer

**Project**

- Rethinking – *DesignThinking* – Health Care
  - The Employer Role

**Activity**

- Communicating information

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**Date of first version:** 9 October, 2007

**Date:** 9 October, 2007

**Version:** 1

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*ID 589 Systems and Systematic Design • Fall 2007 • Gao, Jung, Kuprys, Lindholm*
When personal employee information regarding health is shared with various stakeholders, precautions need to be made to safeguard the employees’ privacy. Much of the information collected and assessed is viewed as private information by employees. Allowing other people to have access to this information is considered by some employees to be an issue.

A solution is needed to process the employee information requested by various stakeholders. Stakeholders should address the kind of information needed, the level of detail, the reason the information is needed, the benefits for employees to provide the needed information, the terms of use for the collected information, and so forth. All the requests will be passed on to the employees.

To protect their privacy, employees should be informed about the requests and verify the release of their personal data. No information should be disclosed to anyone until the employees declare that they fully understand the terms of use for the requested information and approve the requests. This will not happen unless the employees themselves own the information and are able to manage the information independently for their own benefits.

Ask for permission from the employees whose information is needed

Give employees full administrative control of their own health data

Privacy Firewall
# Project: Rethinking – Design Thinking – Health Care

## The Employer Role

### Activity

Communicating information

### Originator

Fei Gao

### Contributors

<table>
<thead>
<tr>
<th>Design Strategies (Ideas)</th>
<th>Solution Elements (Ideas)</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Provide customized information according to the audience</td>
<td>Report-Match</td>
<td>E Existing</td>
</tr>
<tr>
<td>Conduct different presentations for different audiences</td>
<td>Patient Insights For You</td>
<td>S Speculative</td>
</tr>
</tbody>
</table>

### Title:

Audience diversity causes different needs for reporting

### Source/s

Team deliberations

### Associated Function

74. Provide current wellness program data
75. Provide patient lifestyle data
78. Provide patient treatment adherence data
79. Provide employee physical/mental wellness evaluation data
81. Report employee satisfaction
83. Provide insight for barrier of health

### Observation (Insight)

When the information is prepared to be submitted to the providers, the background and position of the people who will read the report must be considered in order to communicate effectively.

### Extension (Insight)

There are several categories of people working for providers in terms of knowledge background, mental model professional interest, job responsibility, etc. The audience of the data and information reported by the employers to the providers may include professionals with extremely diverse backgrounds, which in turn leads to diverse needs for information.

After assessing the information, the deliverable information needs to be organized and compiled before communication. One important barrier of effective information communication is that the employers provide exactly the same copies of reports to different departments and different level of a provider. This is when problems arise. For example, the CEO of the hospital could be more interested in the overall health status of nearby employees, the overall satisfaction of the patient and the potential patient needs in order to develop new services or new service features. Conversely, a physician in the hospital’s network would eagerly want to know the detailed recovery rate of a patient or adherence to the prescription and compare the feedback with that of other hospitals in order to improve the quality of their own work.

Also, for the team that will present the information to the providers, the most important thing is to know who the audience will be and what special needs the audience would have. The nature of the information should be considered along with the characteristics of the audience. Here, several questions should be asked such as: what kind of information does the audience care about the most; what mental model do they have; what do we need to do to better engage the audience; in what way should the information be presented to maximize the buy-in; what kind of media is the most powerful to present this information, and so forth.

### Audience diversity causes different needs for reporting

- **Version**: 1  
  **Date**: 9 October, 2007  
  **Date of first version**: 9 October, 2007
**Title:** Qualitative data hard to communicate

**Associated Function**
- 74. Provide current wellness program data
- 75. Provide patient lifestyle data
- 78. Provide patient treatment adherence data
- 79. Provide employee physical/mental wellness evaluation data
- 81. Report employee satisfaction
- 83. Provide insight for barrier of health

### Design Strategies (Ideas)

- Use ethnographic methods
- Educate provider staff

### Solution Elements (Ideas)

- Health Persona
- Patient Story
- Qualitative Workshop

### Observation (Insight)

While quantitative data is well accepted by most of the audiences, the importance of qualitative information is not widely acknowledged. The presentation and demonstration methods of qualitative insights need to be explored.

### Extension (Insight)

Most of the top executives of the providers have medical backgrounds or managerial backgrounds; almost all of the medical staff have pure medical backgrounds. These people are more comfortable with quantitative data, and are even opposing qualitative approach for important issues. Nevertheless, qualitative approach is too important to be underestimated. The importance and effectiveness of qualitative method must be informed throughout the provider management level as well as the workforce.

Presentation and demonstration methods of quantitative data are well developed through history, but the communication of qualitative data needs to be explored in an innovative way. Several methods are worthy of consideration, such as persona and full-motion video. Lifestyle and insights for barrier of health are especially suitable to be expressed through the mentioned methods. Diaries and essays are also good vehicles through which demonstrate qualitative data.

A well presented and well accepted qualitative insight could help the provider identify invaluable patient need and could in turn lead to improvement in patient experience and quality of care. New services may emerge from the insights, too.
The insights to barriers of health are scattered among all health care data, and are not collected and synthesized.

As the needs of the patient are hard to articulate, similarly, summarizing the barrier of health is by no means an easy task. Potential barriers lie in almost every step in the medical and daily lives of patients. A comprehensive view of the whole field is only available when comprehensive information is collected and assessed. Possible barriers expected are as following:

- Patients' self-care knowledge
- Patients' life style
- Preventative care performance
- Knowledge of patients about provider choosing
- Patient prescription adherence
- Performance of providers
- Performance of medical products
- Provider accessibility
- Waiting time for physician office visit
- Health plan coverage
- Option provided by health plan

Barrier of health insights are not synthesized and integrated.
Title: Inability to closely track employee recovery

Source/s
“Retirees Stop Taking Drugs When Annual Benefit Runs Out” Managed Care Magazine October 2007

Personal observation
Word of mouth

Observation (Insight)
Tracking employees who are using medical devices or medicines is burdensome.

Extension (Insight)
Gathering data about an employee’s recovery rate for medicine and medical device usage is not an easy task for employers. The employee may not use products consistently or he could quit using it without informing his employer.

Additionally, if an employee transfers jobs or retires from the company, the employer will have a difficult time tracking usage since the employer’s contact with him will be decreased. When annual benefits run out, many retirees stop taking prescription drugs because he does not want or cannot purchase his medications out of his own pocket. This abrupt halt in drug use at the end of each year causes inconsistencies for employee and retiree recovery rate measurement.

Design Strategies (Ideas)
Embed digital sensors in medical supply packages
Provide qualitative methods to assess health at different stages of treatment
Use quantitative measuring to assess health during and after treatment

Solution Elements (Ideas)
Status: E Existing M Modified S Speculative

Product Tracker
Digi-Pill
Prescription Compass
Pharma-Check
Med-View

Contributors
Rima Kuprys
Design Factor

Project
Rethinking – *DesignThinking* – Health Care
A Health Care Framework for Employers

Activity
Collecting and Communicating Information

Originator
Rima Kuprys

Contributors

Source/s
Team Discussion

Associated Function
86. Measure employee product needs
87. Measure employee product preferences
89. Measure employee product satisfaction
100. Submit employer-supplier satisfaction

Observation *(Insight)*
Networks and venues for employees to share health care stories and leave feedback are important in order to gather valuable qualitative data which may yield richer data than quantitative methods.

Extension *(Insight)*
Making it possible for an employee to have on-going conversations about health supply preferences allows for continuity and in depth conversations. By belonging to and participating in different feedback networks an employee can find patients who have similar concerns or experiences with health supplies. Employees may use these sites as support groups and in a collaborative way to promote continued sharing, as well as a deeper understanding of needs, preferences and satisfaction.

Design Strategies *(Ideas)*
Offer networking tools to share qualitative feedback about health supplies

Provide a venue for employees to interact with health professionals

Solution Elements *(Ideas)*

<table>
<thead>
<tr>
<th>Status</th>
<th>Health-Wiki &amp; Hotline</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>PharmaBook</td>
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<td></td>
<td>HealthLink</td>
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<td></td>
<td>Careazon.com</td>
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Title: Standard surveys and tests unable to gather rich feedback

Contributors

Version 5 Date: 12 December, 2007 Date of first version: 26 September, 2007
### Design Factor

**Project**
Rethinking—*Design Thinking*—Health Care
A Health Care Framework for Employers

**Activity**
Collecting and Communicating Information

**Originator**
Rima Kuprys

**Contributors**

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<thead>
<tr>
<th>Design Strategies <em>(Ideas)</em></th>
<th>Solution Elements <em>(Ideas)</em></th>
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<tbody>
<tr>
<td>Provide employees a opportunity to share health and lifestyle changes</td>
<td><strong>M</strong> The Monthly Weigh to Health</td>
</tr>
<tr>
<td>Provide a venue for employees to share their health care experiences and concerns in person</td>
<td><strong>M</strong> “An Apple A Day” Program</td>
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<td></td>
<td><strong>M</strong> Product Knowledge Meter</td>
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<td></td>
<td><strong>M</strong> Share n’ CareWorkshops</td>
</tr>
</tbody>
</table>

**Observation (Insight)**
Through collaborative methods with other patients/employees, feedback about satisfaction and preferences regarding health supplies will be richer and provide a venue for continued conversation about user needs.

**Extension (Insight)**
Tests and surveys to gather feedback from patients are useful to give the different stakeholders information about how they are doing in the health care system; however, they cannot always convey an employee’s total healthcare experience. The gathering and use of valuable qualitative data when acquiring employee-patient feedback would enhance reviews of the health care players.

On-site collaboration at the workplace between employees and the different stakeholders about improvements that could be made in the healthcare system would yield better feedback. Through programs like workshops, employees could share their healthcare stories and obstacles and discuss concerns face-to-face with the health care players. This personal interaction could lead to a better understanding about who these stakeholders are creating products and services for and result in more well-rounded data and feedback than surveys or questionnaires provide.

Through these workplace events, the different stakeholders would also have an opportunity to educate their users as well as test their understanding about health care practice.

### Contributors

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<tr>
<td>Rima Kuprys</td>
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</table>

**Title:** Feedback is incomplete without collaboration

**Source/s**
Team Discussion

**Associated Function**
86. Measure employee product needs
87. Measure employee product preferences
89. Measure employee product satisfaction
100. Submit employer-supplier satisfaction

**Date of first version:** 26 September, 2007

**Date:** 12 December, 2007

**Version:** 5
When addressing issues of preference, satisfaction and need concerning health supplies, a qualitative approach is necessary to better understand and empathize with the user.

When analyzing feedback about health care supplies, it is important to collect qualitative data from the users. Qualitative data contributes meaning to quantitative data collected through surveys and questionnaires. Health care is relative and specific to each patient, and it is important to understand individual perspectives and health values. Collection of qualitative data enriches feedback and enhances the product research and quantitative data.

Offer tools that focus on gathering qualitative feedback about employee health supplies

- **Ideal Medicine Generator**
- **HealthLink**
- **Idea-Share**
- **Satisfied Customer**

**Observation (Insight)**

When addressing issues of preference, satisfaction and need concerning health supplies, a qualitative approach is necessary to better understand and empathize with the user.

**Extension (Insight)**

When analyzing feedback about health care supplies, it is important to collect qualitative data from the users. Qualitative data contributes meaning to quantitative data collected through surveys and questionnaires. Health care is relative and specific to each patient, and it is important to understand individual perspectives and health values. Collection of qualitative data enriches feedback and enhances the product research and quantitative data.
**Design Factor**

**Project**
Rethinking—DesignThinking—Health Care
A Health Care Framework for Employers

**Activity**
Collecting and Communicating Information

**Originator**
Rima Kuprys

**Contributors**

**Title:** Instant and direct communication with suppliers not available

**Source/s**
Team Discussion

**Associated Function**
100. Submit employer-supplier satisfaction
103. Provide employee recovery rates
105. Report success/failure of products
106. Report employee product need
107. Report product purchasing trends
108. Report employee out of pocket costs for supplies
109. Report product usage trends

---

**Observation (Insight)**
Communication between the employees and health care stakeholders is important for improved information flows and transparency in the system.

**Extension (Insight)**
Users of medical devices and drugs have unanswered questions about the products such as proper use of the product, potential side-effects and what to do in case of emergency. Often times, the suppliers (those who could offer the most insight to these unanswered questions) are inaccessible and can not to provide solutions to the confused users of their products.

---

**Design Strategies (Ideas)**
Provide instant contact with employees and suppliers during emergencies

**Solution Elements (Ideas)**

- Med-Alert Hotline
- Healthy Buddy
- Red Alert Button
- DD Return Service
- New Product Detector

**Status:** E Existing, M Modified, S Speculative

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**Version** 5  **Date:** 12 December, 2007  **Date of first version:** 26 September, 2007
Supplier reviews and outcomes should be easily accessible and compiled into one location for efficiency.

The health care world would benefit from a systemized approach of providing feedback and review information associated with the supplier health care offerings. General overviews of suppliers such as product reviews, quality, and success rate conducted by experts should be located in one database. Additional databases should provide other access points for reference like personal user reviews and trends, and product and drug costs.

It is important that all this data be organized into their respective categories. This consolidation would provide easy access to data, as well as efficient use of available feedback. Instead of having to search the Internet, information will be readily available in a one-stop-shopping method. These individual, centralized access points would be regulated by experts, so the user would be assured quality and accuracy of information.

Reviews and satisfaction results concerning supplier products circulate throughout the health care system in different varieties. Unfortunately, there is not one standard method for sharing this feedback information that is accessible and understandable by everyone affected by the health care system.
Digitized data may be imported incorrectly or sent inadvertently. Furthermore, computers can be hacked.

The issue is security. There is concern that employers could use personal data against employees by discriminating based on health, personal issues, or lifestyle. Although employers assure security by eliminating information like names, phone numbers and addresses by replacing the employee’s name with a number, the number must be linked to the person’s true identity for continued input.

Mark Rothstein, JD, an adviser to the Health and Human Services and Chairman of the Subcommittee on Privacy and Confidentiality of the National Committee on Vital and Health Statistics commented on the importance of secure privacy: “If patients feel that nobody is going to protect their privacy — if they have substance abuse, go to an STD clinic, or get treated for mental health and could be stigmatized, they’re more likely to stop going to a doctor and they’re going to get worse. You can’t operate a health care system unless patients have absolute trust in the confidentiality of the information they reveal.”

Employers can access to their health data, but this access must not intrude on individual health data that employees choose not to share. It is important for employers to respect the personal nature of their employee’s health information.

Remove personal employee information from employee-supplier statistics

Provide rewards for employees to incentivize private data sharing

Outsource personal employee information to organizers and keepers

Secure-IT Software

Data Separator

Incentive Calculator

Third-Party Data Collectors
**Design Factor**

**Title:** Inconclusive, incomplete or inaccurate quantitative data

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<thead>
<tr>
<th>Project</th>
<th>Rethinking – <em>DesignThinking</em> – Health Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>Assessing Information</td>
</tr>
<tr>
<td>Originator</td>
<td>Rima Kuprys</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
</tbody>
</table>

**Source/s**

**Team Discussion**

**Observation (Insight)**
Quantitative feedback from employees regarding health supplies may not be accurate based on small sample size, skewed results and irrelevant data.

**Extension (Insight)**
Data collected from drug device usage may not yield useful data. The sample size may be too small to yield accurate results. Vice President of Benefits for Assurant Sheila Sweeney discusses why it is important to collaborate with other employers to establish quality and efficiency measures to evaluate the health care system: “No single employer and no insurance company has enough data to do that reliably and consistently...So we’ve got to aggregate the data — and it’s a massive undertaking”.

Moreover, employers and employees may not understand enough of the medical supply industry to accurately assess and communicate their thoughts. This may cause a disconnect in properly offering suppliers useful data shared by employees and employers.

After obtaining a significant result from the statistical data, the quantitative data may not yield enough interesting data for the supplier. This may result in the need for further data collecting through qualitative methods to access information unattainable through surveys and statistical assessments.

**Design Strategies (Ideas)**

- Network with other employers
- Utilize statistic compilers for small or large group assessment
- Attempt qualitative methods
- Educate about medical terminology

**Solution Elements (Ideas)**

- ANOVA and mini-ANOVA
- T-Test
- Statistic Generator
- MyHealthJournal
- Terminology Standardizer

**Status:** E Existing M Modified S Speculative

**NetworkPlace**

**Date of first version:** 26 September, 2007

**Date:** 12 December, 2007

**Contributors**
### Design Factor

| Project | Rethinking—DesignThinking—Health Care  
|---------|----------------------------------------  
| Activity | A Health Care Framework for Employers  
| Originator |  
| Contributors |  
| Source/s | Personal observation  
| Word of mouth |  
| Team discussion |  
| Associated Function |  
| Status: | Existing | Modified | Speculative |  
| Title: | Difficult to obtain complete data from supplier companies |  

#### Observation (Insight)

In order to provide accurate feedback to suppliers, there needs to be a clear and comprehensive organization of the companies so the user knows where to send his feedback and what type of feedback the company wants.

#### Extension (Insight)

There are many drug and medical product suppliers across the nation. New ones sprout up regularly or merge with others to create new hybrids of the old companies. Other times suppliers go bankrupt.

Patients often use drugs from different companies and continuity and availability of products could be problematic. An improved system needs to be implemented for these companies to receive timely and correct feedback.

#### Design Strategies (Ideas)

- Create online network for all supplier companies (required by law)
- Register drugs and devices used by employees

#### Solution Elements (Ideas)

- Status: Existing | Modified | Speculative

- **M** “PhaceBook” for Pharmaceuticals
- **S** Product Tracker

---

**Version**: 4  
**Date**: 12 December, 2007  
**Date of first version**: 26 September, 2007
Typically, employees and employers do not have the proper education and training to assess the medical supply industry. The issue is knowledge and how to apply that knowledge to benefit the supplier stakeholder. Employers and employees may not understand the medical supply industry enough to accurately assess it and subsequently communicate their thoughts. Their insights and observations may either be too subjective or not relevant enough for the supplier to consider.

Furthermore, employees and employers may not be fully educated in health supply terminology. This may cause a disconnect in properly and completely giving suppliers the useful data that employers are sharing.

### Design Strategies (Ideas)
- Merge data by networking with other employers
- Utilize statistics for small group assessment
- Test employee supply knowledge
- Educate employees and employers on supplier information and terminology

### Solution Elements (Ideas)
- NetWorkPlace
- ANOVA and mini-ANOVA
- T-Test
- Product Knowledge Meter
- Terminology Standardizer

### Associated Function
95. Identify preference trends for employee health supplies
96. Identify purchasing trends for products
97. Assess health benefits of certain supplier products

### Contributors
Rima Kuprys
### Project
Rethinking—Design Thinking—Health Care
A Health Care Framework for Employers

### Activity
Assessing Information

### Originator
Rima Kuprys

### Contributors

### Observation (Insight)
Evaluating feedback data through identifiable trends is important for a thorough analysis on employee trends.

### Extension (Insight)
Evaluating patterns created by the organization of collected data aids in the detection of trends for medical supply purchases, usage and satisfaction. Trends can be gathered using both statistical and qualitative data. By using special trend analysis software the process of organizing and evaluating data is easier and the results of the analysis are more conclusive.

### Design Strategies (Ideas)
- Detect patterns and similarities from quantitative/qualitative data
- Compile and analyze comprehensive aspects of employees’ satisfaction with and needs for suppliers products.

### Solution Elements (Ideas)
Status: 
- E Existing
- M Modified
- S Speculative
- Trend Pattern Finder
- Total Me

### Title:
Evaluating feedback data through identifiable trends is important for a thorough analysis on employee trends.

### Version
5

Date: 12 December, 2007

Date of first version: 26 September, 2007
Detailed information about employees’ health care activities is not easily accessible, yet is useful data to a more thorough understanding of the interaction employees have with supplier products.

The ability to monitor and record health supply purchases and usage activity of employees is important to understand and convey improvements that could be implemented into the supplier-employee interaction. Implementing tracking programs that record the purchase and usage of health supplies will help suppliers understand who is buying their products and how they are being used. In this tracking process, products and drugs will be sold with health benefit rebates that can be redeemed when constructive feedback is returned to the supplier on the products. Perks like discounts will make the employee more willing to share purchase and usage data; thus educating employees to the value of their feedback is for an improved health care system.

Incentivize employees to help track their product purchase and usage data

Wellness Rebate
Cost Card
Medicine Machine
HealthMiles

Status: E Existing M Modified S Speculative
**Design Factor**

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<tr>
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<tr>
<td>Rethinking—DesignThinking—Health Care</td>
<td>Rima Kuprys</td>
</tr>
<tr>
<td>A Health Care Framework for Employers</td>
<td></td>
</tr>
</tbody>
</table>

**Activity**

Collecting and Communicating Information

**Contributors**

Rima Kuprys

---

**Title:**

Difficult to assess complete employee health

**Design Strategies (Ideas)**

- Allow for extended evaluations of employee recovery rates

**Solution Elements (Ideas)**

**Status:**

- E Existing
- M Modified
- S Speculative

- Get Well Soon System
- Long Life to Good Health Program

**Observation (Insight)**

Many products and drugs need to be on the market for an extended amount of time before they can be properly evaluated.

**Extension (Insight)**

By taking time to understand the recovery rates of employees and how the use of products and medicine affects those recovery rates, the evaluation of those supplier products is more complete and thorough. Regulating the effects of supplier products on an employee population can help better assess the successes and failures of supplier offerings. It will provide better direction as to where improvements may be made and allow for higher quality products to be made in the future.

---

**Date:** 12 December, 2007

**Date of first version:** 26 September, 2007
## Design Factor

<table>
<thead>
<tr>
<th>Project</th>
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<tbody>
<tr>
<td>A Health Care Framework for Employers</td>
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</tbody>
</table>

### Activity

- Assessing Information

### Originator

Rima Kuprys

### Contributors


### Observation (*Insight*)

When providing feedback on medical supplies, the responses may be based on bias or fashion trends that have little to do with the quality of the product.

### Extension (*Insight*)

Often times, personal feedback is not purely based on the quality of the product but rather on other influences that may affect how the reviewer is response to the product. This is important to consider because these responses could unfairly evaluate the overall success or failure of a product.

Specially trained data analysts could be hired by employers. They will be skilled in assessing qualitative health data. The analyst is trained to make a judgment call on employee’s stories and health supply reports.

### Design Strategies (*Ideas*)

- Evaluate the validity of employee feedback

### Solution Elements (*Ideas*)

- **Health Detector**  
- **Health Judge**

### Associated Function

- 92. Assess employee satisfaction with suppliers
- 94. Assess employee usage of supplier goods
- 97. Assess health benefits of suppliers’ products
- 99. Evaluate employee recovery rates

### Title:

Difficult to assess accuracy of feedback

### Date of first version:

26 September, 2007

### Date:

492

### Contributors:

- Rima Kuprys
The Employer Role

Employer health care success communication

Communicating health care value

Communicating financial results

Assessing financial effectiveness of health plan

Assessing employee wellness data

Disclosing employee wellness data

Sharing health financial data

Assessing health claims data

Assessing impact of health on productivity

Assessing impact of health claims data

Assessing impact of workplace on health

Evaluating healthcare value

Evaluating productivity factors

Evaluating health program success

Evaluating wellness program benefits

Evaluating employee wellness data

Collecting employee lifestyle data

Assessing employee wellness benefits

Assessing effect of lifestyle on health

10 Track administrative costs
18 Perform cost/benefit analysis
20 Evaluate quality of health plan

16 Analyze health claims data
26 Provide health plan results
27 Publish company wellness program results
28 Release overall company health status
73 Analyze health claims data
74 Provide current wellness program data
78 Provide employee physical/mental wellness evaluation data

3 Measure employee productivity
4 Gather working environment quality
7 Track employee adherence with internal health programs
14 Assess employee wellness programs
15 Evaluate employee health and productivity relationship
13 Measure indirect health costs
19 Evaluate employee health results
24 Collect uncovered employee information
59 Measure employee productivity
67 Evaluate impact of health-related problems on productivity
68 Evaluate employee physical/mental wellness

1 Survey employee wellness
5 Monitor employee health
11 Assess effect of work environment on health
14 Assess employee wellness programs
19 Evaluate employee health results
39 Collect employee wellness data
55 Collect employee wellness data
56 Provide health check
68 Evaluate employee physical/mental wellness
Information Structure

The Employer Role

Supplier product evaluation

Evaluating employee health care resource access

Assessing employee health expenses

Understanding employee knowledge data

Collecting health care knowledge data

Understanding employee criteria for health choices

Evaluating plan utilization data

Assessing overall product

Investigating supplier product performance

Determining productivity relationship

Communicating product productivity results

1. Assess employee satisfaction with products.
2. Test employee health care knowledge.
3. Collect employee health care knowledge.
4. Gather data of employee's health care knowledge.
5. Analyze employee's health care knowledge.
6. Evaluate employee health care knowledge.
8. Collect employee plan utilization data.
11. Track employee out-of-pocket expenses.
12. Assess cost burden to individuals.
15. Gather employee's health care knowledge.
17. Test employee health care knowledge.
19. Track employee out-of-pocket expenses.
20. Assess employee health care knowledge.
22. Gather data of employee's health care knowledge.
23. Evaluate employee health care knowledge.
25. Collect employee plan utilization data.
27. Collect employee out-of-pocket expenses.
28. Track employee out-of-pocket expenses.
30. Collect employee health care knowledge.
32. Analyze employee's health care knowledge.
33. Test employee health care knowledge.
34. Collect employee out-of-pocket expenses.
35. Track employee out-of-pocket expenses.
36. Assess employee health care knowledge.
37. Collect employee health care knowledge.
38. Gather data of employee's health care knowledge.
39. Analyze employee's health care knowledge.
40. Test employee health care knowledge.
41. Collect employee out-of-pocket expenses.
42. Track employee out-of-pocket expenses.
43. Assess employee health care knowledge.
44. Collect employee health care knowledge.
45. Gather data of employee's health care knowledge.
46. Analyze employee's health care knowledge.
47. Test employee health care knowledge.
49. Track employee out-of-pocket expenses.
50. Assess employee health care knowledge.
51. Collect employee health care knowledge.
52. Gather data of employee's health care knowledge.
53. Analyze employee's health care knowledge.
54. Test employee health care knowledge.
55. Collect employee out-of-pocket expenses.
56. Track employee out-of-pocket expenses.
57. Assess employee health care knowledge.
58. Collect employee health care knowledge.
59. Gather data of employee's health care knowledge.
60. Analyze employee's health care knowledge.
61. Test employee health care knowledge.
Information Structure

The Employer Role

Employee health care perspective communication

Supplier product evaluation

Assessing supplier product usage

Collecting employee supplier options

Organizing supply consumption

Collecting employee product choice data

Gathering employee utilization data

Compiling employee product compliance

Analyzing provider performance

Assessing employee recovery in sequence

Investigating employee recovery pattern

Determining employee’s rehabilitation pattern

86 Measure employee product needs
87 Measure employee product preferences
88 Measure employee product usage
89 Measure employee product satisfaction

61 Survey drug usage
63 Measure treatment adherence
88 Measure employee product usage
91 Measure prescription adherence

65 Evaluate overall provider performance
66 Evaluate provider performance on specific medical condition level
69 Evaluate employee recovery

62 Track patient recovery data
69 Evaluate employee recovery
77 Provide patient recovery tracking data
84 Measure employee recovery rate

52 Share employee’s rehabilitation pattern
43 Recognize employee’s rehabilitation pattern

Appendix The Employer Role in Rethinking — Design Thinking — Health Care
Information Structure

Employee health care behavior assessment

Employee preference identification

Evaluating employee decision making

Evaluating overall employee health care satisfaction

Assessing relationship of health care decision-making and lifestyle

Studying relationship of health care choices and health plan usage

Identifying employee lifestyle trend

Identifying health care decision-making pattern

Assessing qualities employees value in products

Assessing health plan satisfaction

Collecting satisfaction on all health benefits

Collecting satisfaction on providers

44 Summarize data of employee’s self-healthcare knowledge
45 Identify employee’s health lifestyle trend
46 Identify employee’s criteria for health care decision
47 Provide patient lifestyle data
48 Provide insight for barrier of health

41 Recognize health plan usage trend
42 Identify employee preference on health plan options
43 Identify employee’s health lifestyle trend

30 Collect employee health plan satisfaction
40 Summarize employee satisfaction with health plan
72 Summarize employee satisfaction
33 Survey employee ideas for new health plan options
40 Summarize employee satisfaction with health plan

8 Survey employee satisfaction with all health benefits
30 Collect employee health plan satisfaction
60 Survey employee satisfaction of providers

8 Survey employee satisfaction with all health benefits
30 Collect employee health plan satisfaction
60 Survey employee satisfaction of providers
Sample Working Forms
### Activity Analysis

**Activity:** Collecting information

#### Project

**Rethinking - Design Thinking - Health Care**
The Employer Role

#### Mode

**Provision for Providers**

**Originator:** Fei Gao

**Contributors:**

#### Users (Players)

- HR health benefits staff
- All Employees
- Retirees
- Union delegate
- Provider on-site screening team
- On site nurses/clinicians
- Information vendor

#### System Components (Props)

- Surveys
- Email
- Mail
- Medical device

#### Environmental Components (Set)

- Privacy regulations
- Common sense of privacy
- Medical technology
- Information technology
- On site clinician room

#### System Functions

<table>
<thead>
<tr>
<th>Number</th>
<th>Function</th>
<th>Associated Design Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>Collect employee wellness data</td>
<td>39 Response rate is too low</td>
</tr>
<tr>
<td>56</td>
<td>Provide health check</td>
<td>40 Covered retirees are ignored</td>
</tr>
<tr>
<td>57</td>
<td>Track employee mental health</td>
<td>41 Hard to interpret employee reporting language</td>
</tr>
<tr>
<td>58</td>
<td>Collect employee life style data</td>
<td>42 Privacy issue arises</td>
</tr>
<tr>
<td>59</td>
<td>Collect employee productivity data</td>
<td>43 Hard to define productivity</td>
</tr>
<tr>
<td>60</td>
<td>Survey employee satisfaction of providers</td>
<td>44 Off-site behavior of employees is hard to track</td>
</tr>
<tr>
<td>61</td>
<td>Survey drug usage</td>
<td>45 Test and surveys are not frequent enough to track health</td>
</tr>
<tr>
<td>62</td>
<td>Track patient recovery data</td>
<td>46 Qualitative data not collected</td>
</tr>
<tr>
<td>63</td>
<td>Measure treatment compliance</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Test employee health care knowledge</td>
<td>47 Uniform material not tailored to specific demographic group</td>
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</tbody>
</table>

#### User Functions

**Associated Design Factors**

**Version:** 3  
**Date:** 14 October, 2007  
**Date of first version:** 2 October, 2007
### Activity Analysis

#### Project
**Rethinking - Design Thinking - Health Care**
The Employer Role

#### Mode
**Provision for Providers**

#### Originator
Fei Gao

#### Contributors

### Scenario
Employers set up standard and policy and further process data and information collected.

#### Users (Players)
- HR health benefits staff
- Provider side coordinators/experts
- Information vendor

#### System Components (Props)
- Customized computer programs
- Commercial software

#### Environmental Components (Set)
- Privacy regulations
- Information technology
- Meeting room

### System Functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Design Factor</th>
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<tbody>
<tr>
<td>65 Evaluate overall provider performance</td>
<td>10 Performance of provider oversimplified</td>
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<tr>
<td>66 Evaluate provider performance on specific medical condition level</td>
<td>11 Hard to quantify and standardize productivity</td>
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<tr>
<td>67 Evaluate impact of health related problems on productivity</td>
<td>12 Difficult to separate influence of other factors other than health</td>
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<td>68 Evaluate employee physical/mental wellness</td>
<td>13 Lack of common/easily understandable standard to assess health</td>
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<td>69 Evaluate employee recovery</td>
<td>14 No standard benchmark to evaluate recovery rate</td>
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<td>70 Evaluate employee adherence</td>
<td>15 Reason of disobeying recommendation ignored</td>
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<td>71 Evaluate ROI on wellness program</td>
<td>16 Return of investment of wellness programs oversimplified</td>
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<tr>
<td>72 Summarize employee satisfaction</td>
<td>17 Satisfaction not comparable across providers/employers/employees</td>
</tr>
<tr>
<td>73 Analyze health claims data</td>
<td>18 Uncovered employee and retiree data not included</td>
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### User Functions

#### Associated Design Factors

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<td>2 Date of first version: 2 October, 2007</td>
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Date: 14 October, 2007
**Solution Element**

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**Project**

Rethinking - *Design Thinking* - Health Care

**Mode**

Provision for providers

**Activity**

Collecting information

**Originator**

Fei Gao

**Contributors**


---

**Description:**

An online database listing definition of productivity for each job title. In this website, definition of productivity is discussed nationally as a common measuring standard for all. Employees can get access to the latest definition of productivity on their own.

---

**Properties — what it is:**

- Online database updated regularly
- Common standardized definition of productivity
- Public accessible website
- Forum of productivity study and discussion

---

**Features — what it does:**

- Provides standard to employers nationwide to measure productivity
- Provides venue for employers and employees to discuss definition of productivity
- Provides specific definition for each job title

---

**Associated Function/s**

---

**Source Design Factor/s**

---

**Version** 1  
**Date:** 15 October, 2007  
**Date of first version:** 15 October, 2007
An event held by the employer annually inviting all the retirees. The event includes a general health check, pneumonia immunizations, vision screening, blood pressure checks, review of retiree benefits, legal assistance, disposal of old medications, donation of old eyeglasses, pharmacist review of medications, behavioral health, nutrition, physical therapy, dental care service.

Properties — what it is:

- Annual event gathering retiree information
- Venue providing medical service to retirees
- Chance to assist and educate retirees about health care
- Forum of retirees to exchange experience

Features — what it does:

- Collect retiree health information
- Educate retirees about importance of self-management of health care
- Screen retirees for potential medical risk
- Explain retiree health benefits
- Assist retirees on health and legal issues
Rethinking - Health Care

The Employer Role

Evaluate overall provider performance
Evaluate provider performance on specific medical condition level
Evaluate employee recovery
Track patient recovery data
Provide patient recovery tracking data
Measure employee recovery rate

Assessing provider treatment results
Analyzing provider performance
Assessing employee recovery sequence
Investigating employee recovery pattern
Determining employee's rehabilitation pattern

Evaluating adherence behavior
Reporting effects of adherence on results
Sharing product results
Sharing health plan evaluation criteria
Exposing employee's assessment standard

What End?
Means to

Means/Ends Analysis

Cluster: 306

Project:
Rethinking - Design Thinking - Health Care
The Employer Role
Means/Ends Analysis

Project:
Rethinking - DesignThinking - Health Care
The Employer Role
Assessing provider treatment results

Collecting recovery data
- Collect recovery duration
- Collect patient self-report

Assessing patient recovery
- Evaluate recovery rate

Measuring education effect
- Measure lifestyle change
- Measure adherence

Assessing indirect cost
- Measure productivity lost
- Measure sick-leave time

Assessing patient satisfaction
- Assess employee satisfaction on treatment
- Assemble overall provider satisfaction

Cluster: 306

Project:
Rethinking - Design Thinking - Health Care
The Employer Role

Ends/Means Synthesis
Communicating employee evaluation criteria

Evaluating treatment adherence

Communicating treatment adherence

Communicating product results

Communicating health plan evaluation

Measure treatment adherence

Assess treatment adherence

Communicate insight about prescription

Communicate treatment adherence data

Communicate product satisfaction

Communicate product effectiveness

Communicate product usage trends

Communicate product needs

Provide customer insight about product use

Provide health plan evaluation

Identify patterns in plan choice

End for What Means?

Rethinking - Design Thinking - Health Care - The Employer Role

End for What Means?

End for What Means?

Cluster: 307

Ends/Means Synthesis
<table>
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<th>Treatment Planner Plus</th>
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<th>Surveyor</th>
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<tr>
<td>43 Recognize employee's rehabilitation pattern</td>
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<td>62 Track patient recovery data</td>
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<tr>
<td>84 Measure employee recovery rate</td>
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- ■ Strongly supports fulfillment of the Function
- ■ Supports fulfillment of the Function
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<th>Treatment Planner</th>
<th>Health Plan Finder</th>
<th>Health Choice Maker</th>
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<tr>
<td>80 Provide medicine consumption data</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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<tr>
<td>100 Submit employee-supplier satisfaction</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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<tr>
<td>101 Submit health benefits of suppliers' products</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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<tr>
<td>102 Provide patient lifestyle summary profile</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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<tr>
<td>103 Provide employee recovery rates based on supplies</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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<tr>
<td>104 Report employee drug compliance</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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<tr>
<td>105 Report success/failure of products</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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<tr>
<td>106 Report employee product need</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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</tr>
<tr>
<td>109 Report product usage trends</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
<td>□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □</td>
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</tbody>
</table>

**Legend:**
- □ Strongly supports fulfillment of the Function
- □ Supports fulfillment of the Function
Some questions to ask:

1. How should System Element X work with System Element Y?
2. What new feature/s are possible if System Element X works with System Element Y?
3. What new properties would make System Element X work with System Element Y?

<table>
<thead>
<tr>
<th>System Elements</th>
<th>Health Classroom</th>
<th>ROI Tool</th>
<th>My Health Rewards</th>
<th>AllCare Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Health Plan Finder</td>
<td>Score: 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>---------</td>
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<td></td>
</tr>
</tbody>
</table>

Wellness Program Manager could contribute wellness program and preventive care evaluation data to assess the performance of the health plans when employers are using the Health Plan Finder to evaluate and choose health plans.

<table>
<thead>
<tr>
<th>Health Choice Maker</th>
<th>Score: 0</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Treatment Planner</th>
<th>Score: 2</th>
</tr>
</thead>
</table>

Wellness Program Manager can collect individuals' health problems data from Treatment Planner and evaluate them as risk data to alert the HR personnel.

<table>
<thead>
<tr>
<th>Surveyor</th>
<th>Score: 2</th>
</tr>
</thead>
</table>

Wellness Program Manager requests the Surveyor to send out surveys to the individuals about the satisfaction of the wellness program.

Some questions to ask:

1. How should System Element X work with System Element Y?
2. What new feature(s) are possible if System Element X works with System Element Y?
3. What new properties would make System Element X work with System Element Y?

<table>
<thead>
<tr>
<th>Wellness Program Manager</th>
<th>Automatic Health Machine</th>
<th>New HSA</th>
<th>Health Expenser</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Elements</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

Project: Rethinking - Design Thinking - Health Care: The Employer Role

System Element Pairings: 1-4 with 9-12 row elements and column elements

System Element Relationships

Score
1. Slight relationship
2. Strong relationship
3. Critical relationship
0. No relationship

Cells
To avoid duplication, use this form when row numbers are greater than or equal to column numbers (e.g., for 5-8 in rows vs 1-4 in columns, or 1-4 in columns and in rows)

Wellness Program Manager
1. Individuals could schedule their time to use AHM through Treatment Planner.
2. AHM checkups could be included in individuals' treatment plans as an alternative for hospital check-up.

Surveyor
Individuals can be reached by Surveyor when they are using AHM.

New HSA is reimbursed after Surveyor sends the survey completion signal.
### System Element

<table>
<thead>
<tr>
<th>Originator</th>
<th>Fei Gao</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Superset Element(s):</td>
<td>N/A</td>
</tr>
<tr>
<td>Subset Elements:</td>
<td>N/A</td>
</tr>
<tr>
<td>Source (if Existing or Modified):</td>
<td>New Concept</td>
</tr>
</tbody>
</table>

**Related Elements:**
- My Health Manager
- Health Planner
- Health Classroom
- HR Central
- My Health Rewards

**Description:**

**Surveyor** is an aggregated tool to collect data from employees. By using My Health Manager interface, employee email account and mail system, Surveyor sends out various surveys to corresponding employees at proper time. All the surveys completed are rewarded by My Health Rewards points. Stakeholders could submit to surveyor for information that they want to collect from patients. Rewards points of stakeholder sponsored surveys are provided by the stakeholder. Surveys are tailored to the individual according to their Health Info Code.

**Properties — what it is:**
- A computer program that automatically draws information from existing PHR data.
- A computer program triggered by widgets at proper time.
- A computer program fed by survey questions sent by various stakeholders.
- A friendly interface that uses pop-up windows for surveys.
- A computer program that connects with AllCare Card for reward points.
- A computer program that sends collected data back to stakeholders initiated the survey.

**Features — what it does:**
- Collects information from employees using pop-up windows in My Health Manager interface.
- Tailors questions to the specific condition of the end user.
- Incentivize employees by displaying the reward points.
- Clarifies the term of use of the requested information.
- Informs the employee about the benefits to share the information.
- Recomposes and adapts the questions according to employee profile.
- Reminds the employee about incoming or uncompleted surveys through email and pop-up windows.
- Uses engaging interface design to make the survey process fun for employees.
- Bases on voluntary participation of individuals.
System Element

Fulfilled Functions

2 Test employee health care knowledge
8 Survey employee satisfaction with all health benefits
29 Share employee health care knowledge
30 Collect employee health plan satisfaction
31 Collect employee plan utilization data
33 Survey employee ideas for new health plan options
36 Gather data of employee's knowledge level of self-health management
39 Collect uncovered employee information
53 Share data of employee's self-healthcare knowledge
60 Survey employee satisfaction of providers
64 Test employee health care knowledge
81 Report employee satisfaction
82 Provide employee health care knowledge data
86 Measure employee product needs
89 Measure employee product satisfaction

Surveyor is a software tool allowing various stakeholders to collect information from the individuals effectively. Different stakeholders such as employers, providers, health plans and suppliers could opt in and send the information that they want to collect directly from the individuals. It uses several different ways such as computer popup surveys, direct mail surveys, and email surveys to reach an extensive scope of individuals.

After the stakeholders opt in, each party should submit the information they need to collect, the term of use of the collected information, the benefit for the individuals to share the needed information and the reward point upon completion of the survey.

The Surveyor could communicate with other health care applications that are used by the individuals and decide the time to deliver the survey base on the schedule of the individuals. For example, after a doctor visit, surveys about the conversation quality and overall satisfaction of the visit are prompted; at the end of a treatment, surveys about satisfaction of the recovery, the whole treatment, and the medical product are prompted by Surveyor.

Before the survey begins, the Surveyor displays the term of use and the benefits for sharing this information. Also, incentives are provided by the

Discussion

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Before the survey begins, the Surveyor displays the term of use and the benefits for sharing this information. Also, incentives are provided by the
stakeholder who sends out the surveys

The Surveyor could pull data from the existing PHR and other sources to simplify and reduce the number of the questions before the survey reaches the individuals. The Surveyor could also adjust the questions asked according to the ones that have already been answered using the technology called Computer Adaptive Test (CAT). For example, if the survey taker replies that he/she did not adhere to the treatment plan well, the next questions would be geared towards asking about the reason of the dis-adherence rather than other questions.

Surveyor uses several ways to reach individuals. If the individuals are online using the My Health Manager, the Surveyor could use pop-up dialogues to alert the patient about the incoming surveys prompted by certain events. Emails are also sent to the individuals' accounts to remind them. For retirees, some of the important surveys such as satisfaction survey of the health plans or overall employee health care benefits are printed out as hard copies and mailed to the retirees' address.

Before the content of the questions Surveyor always displays the term of use of the collected information to explain away the individuals' privacy concerns. Benefits for the individuals to sharing the requested information are clarified including the meaning of the return result for the individuals themselves. Incentives are clearly stated. The Surveyor works together with the My Health Rewards to provide rewards points upon completion of a survey.

The potential surveys that the Surveyor would operate includes product satisfaction surveys from suppliers, treatment satisfaction surveys from providers or health plans, treatment adherence surveys from providers, health literacy surveys from My Health Classroom and government, health plan satisfaction surveys from health plans, wellness program satisfaction surveys from employers or related third party, overall employee health care benefit satisfaction surveys from the employers or government and so on. After the agreements are given by the individuals, data will be collected and send back to the stakeholders.

Scenario

David just comes back from a doctor visit. He logs into his Health Planner to look at his calendar.

After he logs in, there is a bubble popping up from the corner of the screen telling him that a new survey from his doctor's hospital is available. 50 Rewards points are granted upon completion of this survey, says in the bubble. 'That worth a shot', thinks David. He clicks on it and enters a simple and clear webpage. On it is the term of use of the requested information. It also tells David that the result of the survey would be sent to the doctor's profile and would affect the rating of the doctor and that the comments that David gives can be seen by others when choosing a doctor. David goes ahead and takes the survey. First several questions such as time and reason of the visit are already filled out by the program by pulling from his visit record for today. The rest of the questions includes how is the conversation, how well did David understand the instructions from the doctor and so on.

One interesting thing David noticed during the survey is that, it seems to interact with David based on what has been asked and answered. For example, after David replies 'less than satisfied' in the conversation quality question, the Surveyor goes on to ask him the reason why he is not satisfied. Answer this survey is like making a conversation, thinks David, it is fun.

After this survey is taken care of, another survey pops up. It is a health literacy test about the health problem for which David went to the doctor's. He takes it. And it shows David is doing OK in the test but he should review several important issues about healthy lifestyle to prevent his potential hypertension problem in the My Health Classroom. After doing a survey and a test, David is rewarded 100 points by My Health Rewards.
Wellness Program Manager is a software tool that is accessed by the HR personnel to manage the employer’s wellness program. Wellness program utilization data is collected and the outcome of each wellness program option is evaluated by this tool. Satisfaction is combined with outcome evaluation to form comprehensive evaluation. It awards the third party or health plan that administrates the most successful wellness programs. This software displays emerging employee health problems and helps the HR personnel address the problems by adjusting the wellness program options accordingly.

Properties — what it is:
- Software serves as a module on the HR Central platform
- Interface that can be accessed only by HR personnel
- Program that communicates evaluation data to the wellness program practitioner
- Program that aggregates the individuals’ feedback data about the wellness program
- Program works with Surveyor to conduct related surveys

Features — what it does:
- Recommends proper options for employee health risks
- Aggregates wellness program evaluation data
- Sends aggregated feedback to the wellness program practitioner
- Incentivizes successful wellness program options
- Replaces unsuccessful options with highly demanded options
- Supports HR personnel to react to the emerging and existing health problems of employees
<table>
<thead>
<tr>
<th>Fulfilled Functions</th>
<th>Associated Design Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Monitor employee health</td>
<td>5 Properly trained staff not available</td>
</tr>
<tr>
<td>7 Track employee adherence with internal health programs</td>
<td>6 Employees unwilling to provide necessary information</td>
</tr>
<tr>
<td>8 Survey employee satisfaction with all health benefits</td>
<td>7 Employees unmotivated to provide necessary information</td>
</tr>
<tr>
<td>14 Assess employee wellness programs</td>
<td>8 Qualitative data may be lost</td>
</tr>
<tr>
<td>18 Perform cost/benefit analysis</td>
<td>14 Important relationships overlooked</td>
</tr>
<tr>
<td>27 Publish company wellness program results</td>
<td>19 Information disclosure benefits unclear</td>
</tr>
<tr>
<td>34 Collect employee actual usage of health care equipment and medicine</td>
<td>21 Employee's might not want to share their information</td>
</tr>
<tr>
<td>37 Assemble information on employee health lifestyles</td>
<td>26 Specially trained staff is needed</td>
</tr>
<tr>
<td>45 Identify employee's health lifestyle trend</td>
<td>27 No standard for methods of collecting information</td>
</tr>
<tr>
<td>48 Provide employee satisfaction data</td>
<td>31 Prejudice opinion of evaluation might be added</td>
</tr>
<tr>
<td>55 Collect employee wellness data</td>
<td>38 No evidence of information's trustworthiness</td>
</tr>
<tr>
<td>58 Record employee demographics and lifestyle</td>
<td>39 Response rate is too low</td>
</tr>
<tr>
<td>70 Evaluate employee adherence</td>
<td>40 Covered retirees are ignored</td>
</tr>
<tr>
<td>71 Evaluate ROI on wellness program</td>
<td>41 Hard to interpret employee reporting language</td>
</tr>
<tr>
<td>75 Provide patient lifestyle data</td>
<td>42 Privacy issue arises</td>
</tr>
<tr>
<td></td>
<td>43 Hard to define productivity</td>
</tr>
<tr>
<td></td>
<td>45 Test and surveys are not frequent enough to track health</td>
</tr>
<tr>
<td></td>
<td>46 Qualitative data not collected</td>
</tr>
<tr>
<td></td>
<td>47 Uniform material not tailored to specific demographic group</td>
</tr>
<tr>
<td></td>
<td>51 Lack of common/easily understandable standard to assess</td>
</tr>
<tr>
<td></td>
<td>53 Reason of disobeying recommendation ignored</td>
</tr>
<tr>
<td></td>
<td>54 Return of investment of wellness programs oversimplifies</td>
</tr>
<tr>
<td></td>
<td>58 Report lacks common standard and does not support comparison</td>
</tr>
<tr>
<td></td>
<td>60 Employee privacy infringed</td>
</tr>
<tr>
<td></td>
<td>61 Audience diversity causes different needs for reporting</td>
</tr>
<tr>
<td></td>
<td>62 Qualitative data hard to communicate</td>
</tr>
</tbody>
</table>

**Discussion**

**Wellness Program Manager** is a software tool that is accessed by the HR personnel to manage the employer's wellness program. The data of the employees' utilization of wellness program is collected by the program from the individuals' Health Planner account. Employees' personal information is de-identified and privacy is ensured.

The HR personnel could see the emerging and existing health risk in **HR Central**. The risks are color coded and ranked on one side, and the wellness plan options offering and utilization information is listed on the other side. The HR personnel could compare the two sets of data and charts to see whether all the risks are addressed.

The HR personnel react to the emerging health problems by adjusting the wellness program options accordingly.

The **Wellness Program Manager** aggregates, assesses employee lifestyle data and compile it into an index showing the HR personnel the lifestyle of the entire workforce in general. Personal information is removed so that the HR personnel will not have the private information of the employees. General lifestyle data could give the HR personnel a better idea what wellness program options are needed. Which ones should be recommended or even pushed to the employees to address their specific unhealthy lifestyle.
The outcome of each wellness program option is aggregated and evaluated in the Wellness Program Manager. Satisfaction is combined with outcome evaluation to form comprehensive evaluation. The third party or health plan which is administering the wellness programs are rewarded according to the assessment. Low graded program options are replaced with highly demanded programs that is required through employee feedback.

HR personnel could use Wellness Program Manager in conjunction with the Surveyor to create wellness program surveys asking for feedback of existing programs and needs of new program options. Survey data is sent back to the Wellness Program Manager and automatically aggregated and assessed. Results of the surveys are displayed as evaluation scores and emerging needs and are listed in the program option list.

Scenario

Brenda is an HR manager in charge of the management of the wellness programs. She is mainly using a software tool called Wellness Program Manager in HR Central to do her daily job. On a Monday morning, she logs into her administrator account of the Wellness Program Manager as usual and reads the aggregated wellness program feedback report for the last week. Wellness Program Manager did all the work in generating the report for her. She just needs to sit back and read the charts, numbers and the excerpt of the comments given by the employees.

But today something special attracts her attention in the report. Two new cases of diabetes appear in the first column of 'emerging risk', and up to 8 comments are related with the emerging need of a focused diabetes program. Both of the messages are colored in red which means the Wellness Program Manager regards both of them top priority. Diabetes is a big, rising concern of the staff, thinks Brenda. She clicks on the network icon of the wellness program manager in her HR Central network links and sends a RFP of a new diabetes program to the manager. She quotes several key numbers and charts in the report she is reading to give the wellness program manager some context about the rising health problem of the company. She will compile a detailed report later today and send it to the manager for his reference to design the proposal of the new program. Brenda is expecting for some good ideas and effective means to put the rising diabetes risk into a halt. There can be some education programs, special fitness center exercises, lifestyle programs. Who knows what they will come up with but it'd better be good stuff, thinks Brenda.

Brenda also notices that the weight control program has been on the top of the employee rating list for months. According to the comments from the participants, it is fun and effective, some hard work there though. This program has already reached the benchmark for a quarterly award. So Brenda writes a congratulation letter to the course instructor and cc's it to all of the other instructors. That will get some competition in there, Brenda talks to herself. The incentives for the best wellness plans are not so big, but they are big enough to touch the wellness program managers' ego, at least the incentives work for the guys work here.

A couple of items are in orange. Brenda wants to address those before they turn red. One of the issues is from the lifestyle survey. The staff is spending more and more time on internet at their desk when they are off. Though some of them are working extra hours at home, they need time to stretch their legs and do exercises or whatever. The other issue is from the health literacy survey disseminated by My Health Classroom. The result shows that the staff needs better understanding of the importance of sleep. These two issues seem to go with each other pretty well, thinks Brenda. She will work on a plan after lunch break.