Rethinking – DesignThinking – Health Care

The Health Plan Role

Appendices

Matthew Gardner, Kichu Hong, Preethi Lakshminarayanan, Peter Rivera-Pierola, Sriram Thodla
# Table of Contents

Charter ........................................................................................................ 1

Defining Statements .................................................................................... 8

Function Structure ...................................................................................... 25

Design Factors .......................................................................................... 29

Information Structure ................................................................................ 65

Sample Working Forms .............................................................................. 71

  Activity Analyses .................................................................................... 71

  Solution Elements .................................................................................. 73

  Means/Ends Analyses ............................................................................. 75

  Ends/Means Syntheses .......................................................................... 77

  Matrix Check forms for Ends/Means Synthesis .................................... 79

  System Element Relationships ............................................................... 81

  System Elements .................................................................................... 83
Rethinking – Design Thinking – Health Care

A Health Care Framework for Employers, Providers, Health Plans, Suppliers and Governments

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.*\(^4\)

---

2. Ibid, pp 1,2.
4. Ibid, pp 6,7.

**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.

---

**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

<table>
<thead>
<tr>
<th>Services for Employers</th>
<th>Services for Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fei Gao</td>
<td>Hanna Korel</td>
</tr>
<tr>
<td>Margaret Jung</td>
<td>Amy Palit</td>
</tr>
<tr>
<td>Rima Kuprys</td>
<td>Soo Yeon Paik</td>
</tr>
<tr>
<td>Amber Lindholm</td>
<td>Alexander Troitzsch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Services for Suppliers</th>
<th>Services for Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amy Batchu</td>
<td>Ash Bhoopathy</td>
</tr>
<tr>
<td>Min Joong Kim</td>
<td>Lin Lin</td>
</tr>
<tr>
<td>Suat Hoon Pee</td>
<td>Ye Kyung Yoo</td>
</tr>
<tr>
<td>Amy Seng</td>
<td>Lise Lynam</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Services for Health Plans</th>
<th>Services for Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew Gardner</td>
<td>Preethi Lakshminarayanan</td>
</tr>
<tr>
<td>Kichu Hong</td>
<td>Peter Rivera-Pierola</td>
</tr>
<tr>
<td>Sriram Thodla</td>
<td></td>
</tr>
</tbody>
</table>
Project Advisors:
- Charles L. Owen  Distinguished Professor Emeritus
- John Pipino    Adjunct Professor

**Schedule**
The project will be conducted from August 28 to December 7, 2007.

<table>
<thead>
<tr>
<th>Week</th>
<th>Phase</th>
<th>Activity</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug 28</td>
<td>Introduction</td>
<td>Introduce project</td>
</tr>
<tr>
<td></td>
<td>Aug 31</td>
<td>Project Definition</td>
<td>Develop Issues &amp; Defining Statements</td>
</tr>
<tr>
<td>2</td>
<td>Sep 4</td>
<td>Issues</td>
<td>DefStats 1</td>
</tr>
<tr>
<td></td>
<td>Sep 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sep 10</td>
<td>Health Workshop</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sep 11</td>
<td>Develop Modes and Activities of Function Structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sep 14</td>
<td>In-Progress Review</td>
<td>DefStats 2 Fn Struc 1</td>
</tr>
<tr>
<td>4</td>
<td>Sep 18</td>
<td>Information Development</td>
<td>Generate Functions, Design Factors and Solution Elements</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Action Analysis</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sep 21</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Sep 25</td>
<td>Information Structuring</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sep 28</td>
<td>In-Progress Review</td>
<td>DefStats complete Fn Struc 2 DesFacs 1 SolnEls 1</td>
</tr>
<tr>
<td>6</td>
<td>Oct 2</td>
<td>In-Progress Review</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oct 5</td>
<td>Information Development</td>
<td>Complete Functions, Design Factors and Solution Elements</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Action Analysis 2</em></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Oct 9</td>
<td>Health Workshop</td>
<td>Fn Struc complete DesFacs complete SolnEls complete</td>
</tr>
<tr>
<td></td>
<td>Oct 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Oct 16</td>
<td>Information Structuring</td>
<td>Score Soln Elements vs Functions</td>
</tr>
<tr>
<td></td>
<td>Oct 19</td>
<td>Structuring</td>
<td>RELATN input</td>
</tr>
<tr>
<td>Week</td>
<td>Phase</td>
<td>Activity</td>
<td>Product</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>9</td>
<td>Oct 23</td>
<td>Concept Development</td>
<td>Means/Ends Analysis</td>
</tr>
<tr>
<td></td>
<td>Oct 26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Oct 30</td>
<td></td>
<td>Ends/Means Synthesis</td>
</tr>
<tr>
<td></td>
<td>Nov 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Nov 6</td>
<td></td>
<td>In-progress Review</td>
</tr>
<tr>
<td></td>
<td>Nov 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Nov 13</td>
<td></td>
<td>Presentation</td>
</tr>
<tr>
<td></td>
<td>Nov 16</td>
<td>Communication</td>
<td>Refine final SysEl; write report; complete illustrations</td>
</tr>
<tr>
<td>13</td>
<td>Nov 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nov 23</td>
<td>Thanksgiving</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Holiday</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Nov 27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Dec 4</td>
<td></td>
<td>Final Presentation</td>
</tr>
<tr>
<td></td>
<td>Dec 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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?
<table>
<thead>
<tr>
<th>Defining Statement</th>
<th>Issue</th>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
<td><strong>Question at Issue</strong></td>
<td><strong>To what degree should health plans adapt based on the user’s demographics?</strong></td>
</tr>
<tr>
<td>Rethinking—DesignThinking—Health Care: The Health Plan Role</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Originator</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sriram Thodla</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contributors</strong></td>
<td><strong>Position</strong></td>
<td>Health plans should create a core set of services targeted at the specific time of life of the patient. In addition, they should also provide a menu of ancillary services that can be customized by the specific customer.</td>
</tr>
<tr>
<td>Nov. 2007. Matthew Gardner</td>
<td>□ Constraint</td>
<td></td>
</tr>
<tr>
<td>Nov. 2007. Kichu Hong</td>
<td>■ Objective</td>
<td></td>
</tr>
<tr>
<td>Nov. 2007. Peter Rivera-Pierola</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sources</strong></td>
<td><strong>Alternative Position</strong></td>
<td>Health plans should offer tiers of services based on broad socioeconomic segments in order to lower risk as much as possible.</td>
</tr>
<tr>
<td>Personal Observation</td>
<td>□ Constraint</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Objective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Directive</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health plans should create a menu of services and products that can be assembled together for a specific person.</td>
</tr>
<tr>
<td></td>
<td>□ Constraint</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Objective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Directive</td>
<td></td>
</tr>
</tbody>
</table>

**Background and Arguments**

Currently, most health plans tier services based on cost and flexibility with plans such as HMO and PPO. However, very few take the life situation of the customer into account and are inflexible when it comes to customizing additional services to the core plans. Health plans should recognize that customer needs vary with their age and lifestyle and offer plans that take this into account.

Health plans can benefit from more personalization as customers will feel that their needs are more directly being met. In addition, Health plans can use their plan profiles to better balance their risk profile. Finally, offering a customizable set of services could mean that customers who would have otherwise been rejected from an inflexible plan can still get a modicum of coverage with a flexible plan.
### Defining Statement

**Project**  
Rethinking—DesignThinking—Health Care: The Health Plan Role

**Originator**  
Sriram Thodla

**Contributors**  
- Nov. 2007. Matthew Gardner
- Nov. 2007. Kichu Hong
- Nov. 2007. Preethi Lakshminarayanan
- Nov. 2007. Peter Rivera-Pierola

**Sources**  

**Personal Observation**

Health plans must focus on using regional services and sources of pharmaceuticals in order to ensure the highest level of quality.

Health plans should avail themselves of health services outside of the U.S. in order to reduce cost as well as provide alternate therapies for traditional medical problems.

Health plans must deliver services regionally and only use outsourcing to reduce administrative costs.

Health plans must focus on using regional services and sources of pharmaceuticals in order to ensure the highest level of quality.

### Background and Arguments

The rising costs of managed health care and increasing competition between health plans dictate that health plans need to continuously find ways of competing effectively. Outsourcing technology, administrative and medical services where appropriate can help health plans gain efficiencies while providing health plan customers with exposure to new, innovative and alternative medical practices. (Porter 2006).

The outsourcing of health care administrative and technology processes can provide the costs savings that would allow smaller providers to compete with larger established but less nimble providers, increasing market competition. The proactive outsourcing of medical services can enable health plan customers access to affordable services worldwide that would have otherwise been unaffordable or too risky.
### Defining Statement

#### Project

Rethinking—Design Thinking—Health Care: The Health Plan Role

#### Question at Issue

To what degree should health plans share patient medical information with suppliers?

#### Originator

Sriram Thodla

#### Contributors

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 2007.</td>
<td>Matthew Gardner</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Kichu Hong</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Preethi Lakshminarayanan</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Peter Rivera-Pierola</td>
</tr>
</tbody>
</table>

#### Position

- **Objective**
  - Health plans should share aggregate patient medical information, data on frequent diseases, effectiveness of treatments and opportunities for new devices with suppliers to drive the development of new medical solutions.

#### Alternative Position

- **Objective**
  - Health plans should actively partner with and fund suppliers to develop medical solutions that would only benefit their patient base.

- **Objective**
  - Health plans should auction to suppliers, aggregated medical information, data on disease prevalence and effectiveness of medicines etc.

#### Background and Arguments

In the health care industry, medical and patient information is not freely shared between the various players to improve the overall patient care cycle. Instead, information is used as leverage to shift or lower costs (Porter, 2006). While various mandates such as Electronic Health Record are slowly being adopted, Health Plans should actively and aggressively lead the charge in sharing aggregated medical information.

Sharing medical information will have multiple benefits. Doing so will benefit Health Plans as suppliers will be able to more accurately target their drug and technology development efforts. Providing the information on treatment effectiveness can help suppliers develop new treatments that can better serve the needs of the patient. It is important to provide this information to all suppliers instead of just a few which will allow the benefits of market competition to develop a competitively priced and technically sound product, ultimately benefiting health plans and their customers.
### Defining Statement

#### Project
Rethinking—DesignThinking—Health Care: The Health Plan Role

#### Originator
Matthew Gardner

#### Contributors
- Nov. 2007. Kichu Hong
- Nov. 2007. Preethi Lakshminarayanan
- Nov. 2007. Sriram Thodla
- Nov. 2007. Peter Rivera-Pierola

#### Sources

### Issue

#### Cost Assignment

### Question at Issue
How should the cost of health care be divided between employers, government (society), and individuals?

### Position

- Constraint
- Objective
- Directive

The system (some mix of government/society and employers) ought to cover all individuals so that no one individual pays for his or her health care.

### Alternative Position

- Constraint
- Objective
- Directive

To foster responsibility for personal health care, each person ought to share cost with a larger party (society or employer) so that he or she retains some responsibility for the cost of health care.

- Constraint
- Objective
- Directive

The government/society should pay the complete costs of health care in a single payer system.

### Background and Arguments

The costs of health care must be covered by someone. We can't expect users in all strata of society to be able to pay for their own health care costs; in fact, almost no one can reasonably be expected to pay for some of the large bills that health care incurs. People in some demographics may not even be able to pay a fraction of the costs.

One possible payer is society. The movie Sicko investigates four social health care systems that appear to be very successful: France, Canada, England, and Cuba. Every person who needs health care receives it without cost to them (outside of taxes) or very inexpensively. Value to the user is high: the life expectancy for some of the four countries is higher than that of the US; and the infant mortality rate lower. It seems like a good case for socialized medicine. However, what is not discussed is the efficiency of these systems. Socialized health care may lead to more waste and extraneous services. And with one payer, it is unlikely that the competition to drive innovation and improvement would exist.

Currently, employers pay for much of the costs of private health care. Employees pay the balance to cover them and their families. Though Porter does recommend that in the ideal scenario employers would not be a part of the picture, they must still continue to be involved in order to help shoulder the costs of health care. Besides, employers have an interest in maintaining a healthy staff. Healthy employees can be expected to work at higher productivity levels than unhealthy. Employers save on sick time when their employees avoid serious conditions by receiving quality care. Employers should pay a part of the costs of health care for those who they employ.

There are large segments of the population who are not able to pay for health care. This means they are dependent on other parties for paying. Employers have no vested interest in and do not gain economically by paying health care costs of those they do not employ. Supporting these members of society falls to the employed segment of society through taxes.

Currently, government programs administer and pay health care costs of members of society unable to pay. Federal government subsidized health care is broken down into two programs: Medicare and Medicaid. Medicare is a health insurance program for people over 65 years old and for those with End Stage Renal Disease. ("Medicare and You," 2007. http://www.medicare.gov/Publications/Pubs/pdf/10050.pdf). It is administered by the federal government. Qualifying individuals may or may not have to pay out of their own pocket to supplement what the program covers. Medicaid is a program available only to certain low-income individuals and families who fit into an eligibility group that is recognized by federal and state law.” (CMS website). The program is administered at the state level, but overseen by the federal government. “Medicaid does not provide medical assistance for all poor persons.” People must meet certain eligibility requirements before they can qualify for Medicaid assistance. States may also have additional programs to help poor people.

In short, competition is necessary for innovation and improvement. A single payer would not allow for competition. Thus we need to continue to allow multiple, competing players. However, there is no obvious motivation for private payers to include individuals under their coverage who are unable to pay. To resolve the two strongly opposed realities, we must create a system in which health plans administer the care of not only their paying users, but also the government qualified individuals. Based on Porter's arguments for competition, costs will, in time, be lowered allowing for the government to subsidize on an even more widespread basis.

---

Matthew Gardner
Nov. 2007.

Kichu Hong
Nov. 2007.

Preethi Lakshminarayanan
Nov. 2007.

Sriram Thodla
Nov. 2007.

Peter Rivera-Pierola
Nov. 2007.
Due to its non-competitive nature, the government is not run efficiently. To ensure that patients get the best care, they need to be served efficiently and as immediately as possible. Because of the competitive nature of health plans, they are better able to develop an environment in which care is not only the primary concern, but also efficiently administered.

In the existing conditions, we have market segments. The retired segment is primarily served by the government, as is the low-income segment. Because there is little or reduced competition in these sectors, inefficiencies occur. Because these programs are not always sufficient to treat in early stages, costs become higher. These segments of the population need concerned attention that have a vested interest in quality care for individuals.

If the government ever were put in a competitive position, we would eventually see that it has an unfair position with the ability to write policy and pass legislation. Competition between the private and public arena could lead to changes that don’t necessarily create better care.

If private and public health plans served different segments in parallel operation, we would probably see that the two systems would exist out of balance. They would most likely each generate services that would duplicate or approximate the services of the other, and the two systems would not strive for competitive improvements.

Due to its non-competitive nature, the government is not run efficiently. To ensure that patients get the best care, they need to be served efficiently and as immediately as possible. Because of the competitive nature of health plans, they are better able to develop an environment in which care is not only the primary concern, but also efficiently administered.
### Background and Arguments

Shifts in the communication paradigm due to technological advances are changing the world. Business and society are feeling this change as more email is sent and more information and opinions are shared via blogs, e-zines, and other electronic media.

Social networking has also experienced a paradigm shift as more networking has shifted to electronic media. No longer is a physician’s network limited by locale. He or she can develop a network with many other physicians who are looking at similar problems. Porter recommends that physicians and hospitals develop strong ties. He particularly recommends that general care providers network with the best specialists so that patients not only benefit from their general practitioner, but also from the general practitioner’s network. A practitioner who has strong ties with a particular specialist may have better chance of getting his patient an appointment.

Luo suggests that the environment is ready for providers to respond to electronic social networks. Several medically related social network web sites have already been developed though participation on these sites has been limited.

However, benefits of provider networking are small to health plans. If providers do not contract with a particular group of providers, they would get no benefit from fostering provider networks. This responsibility falls to other parties. [This position is contingent on the position taken in Health Plan–Provider Relationship issue].
### Defining Statement

#### Project
Rethinking—Design Thinking—Health Care: The Health Plan Role

#### Originator
Kichu Hong

#### Contributors
- Matthew Gardner
- Peter Rivera-Pierola
- Preethi Lakshminarayanan
- Sriram Thodla

#### Sources
- Increase of carcinoma of large intestine rate for past 20 years, Seoul: YTN News.

#### Issue
Service: Preventative Health Care

### Question at Issue
To what extent should health plans be fostering preventive health care?

### Position

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Objective</th>
<th>Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Health plans should develop and foster preventive health care services in order to reduce/prevent health problems and thus reduce medical cost.

### Background and Arguments

Cost of treatment for health problems tends to rise if it develops chronically. Serious medical treatment involving surgical procedures also elevate the cost to health plans. By providing preventive health care services, health plans can reduce unexpected cost that could be used for value-added services otherwise. YTN News, Korea reported that the rate of carcinoma of large intestine in Korea has increased 12 times over the past 10 years, and this could be slowed down by regular health checkups (July, 2007).

In addition to direct treatment cost, serious health problems generate cost for secondary and tertiary medical examinations and procedures. Preventive health services will reduce risks of future health problems and thus reduce overall cost.

Health plans can design various ways of providing and delivering health care services. Periodic health examination is one method. Possible services include planning proper diets for users, informing and alerting users about environmental factors such as air pollutants, providing timely inoculation for infectious or viral diseases such as colds, and educating users and providing resources to maintain their health.

In addition to basic preventive services, health plans can introduce premium services such as elective cancer screenings for those who are willing to pay for.

It is highly likely that health plans will reduce their total cost of wellness for a patient who has taken advantage of preventative services. These benefits however are hard to evaluate but fall in line with Porter’s objective of health plans becoming health institutions.
Incentive programs developed by health plans can encourage individuals to improve their health. Incentives can be in the form of direct monetary means or other value-added services, e.g., rebating partial or full amount of unspent health plan expense to users, providing discount rate for upcoming years, or disbursing the unspent amount to provide health care services such as a fitness center membership. Incentive programs will encourage users to maintain good health and the introduction of rebating system will provide a positive stimulus to health plan market. Health plans will have to choose whether to spend on cost of care or on incentive programs. Assuming that preventative costs would be less than cost of care, can reduce their operational cost by promoting healthy standards, and not by denying care.

Exclusive membership provided with direct financial reward is another means of incentive schemes. A health insurance saving account can be one model of exclusive membership. Health plans can actively engage in investing activities such to earn profits which are returned to users as incentives or dividends. Private health insurance companies in Korea including global corporations such as Kyobo Life Insurance, Prudential, and Allianz offer health insurance services incorporated with financial services.
Health care histories of users are valuable resources for designing customized health plans. We must define means of information sharing among different health plans and record ownership as well as authority levels of access to data. Information sharing will also make transitions between different health plans easier.

Health plans must build and implement one integrated and compact information system and thus reduce administrative cost. This will also facilitate transitions of users among different health plans and ultimately provide healthy incentive for competition between health plans. Databases of accumulated information from all health plans through an integrated system will be valuable resource for all participants in health care industry. However, there are problems such as cost sharing for building and implementing the integrated system, timing constraints and privacy issues. However, there numerous examples of industries adopting standards such as the financial industry.

One other factor to consider is ownership of information. Currently, individuals don't have complete access to their medical records. It would be valuable for individuals to have access to their health care histories including medical treatment records in order to compare different health plans, providers, and suppliers and make correct choices when needed. The problem is that users do not understand their conditions from the raw medical data. The data needs to be interpreted before it is understood.


Health plans should record health care histories of users and provide them to users.

Health plans should share health care histories of users by providing free information access to different health plans chosen by users.

Health plans must build and use unified information system and thus reduce administrative cost and facilitate transitions of users between different health plans.
Health plans reside in a complex and highly competitive market. Entry to the market is not easy. According to Porter, the market is highly competitive, but in a wrong way and this makes it hard for new entrants into the market.

Consumers should have unbiased choices for health plans, and in order to do that, correct and updated information of different health plans must be provided for comparison. New as well as existing health plans seek ways of delivering information. This requires the allocation of resources such as employees and information technology as well as traditional analogue methods. Different resources and measures have different costs and the costs goes back to consumers. Thus, health plans must seek the most effective way for getting the same message out to their consumers.

Information technology is a cost-effective methods to share and deliver information, but is not universally available. Analog methods such as consultants, personal representatives or counselors over phones are more expensive and geographically restricted, but have advantages of direct consumer contacts and can guide to better understanding. Different methods have different advantages and disadvantages, and health plans must be able to utilize all relevant resources and develop methods to make their services correctly known to the public.

Frustration increases when consumers search for suitable and affordable health plans. Currently, all we can get from internet search is numerous price comparing sites. It is hard to find one very proper health plan. Also it is very difficult to understand terms and conditions health plans suggest. Terminologies should be clearly defined and universally understood by health plans. Third party groups can also help, helping individuals understand which health plans are correct for them. The role of third parties can vary from simply introducing health plans to defining terminologies, rating health plans and making recommendations to consumers. However, it is also possible that the overall cost rises due to creation of new parties to the market.

To shift cost from overactive marketing and promotional activities to value-added services, health plans must eliminate unnecessary marketing activities. For example, spam mails are everywhere. Redundant marketing activities do not draw attention from consumers, but rather add frustration to consumers. Unnecessary and overly aggressive marketing only raise costs. Exaggerated advertising does not educate the consumer. Health plans must therefore be responsible in deploying their marketing efforts to ensure that the correct message is being delivered to the consumer.
### Defining Statement

<table>
<thead>
<tr>
<th>Project</th>
<th>Question at Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rethinking—DesignThinking—Health Care: The Health Plan Role</td>
<td>To what extent should Health Plans shoulder responsibility during emergency conditions?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Originator</th>
<th>Contributors</th>
</tr>
</thead>
</table>
| Preethi Lakshminarayanan | Nov. 2007. Matthew Gardner  
Nov. 2007. Kichu Hong  
Nov. 2007. Peter Rivera-Pierola  
Nov. 2007. Sriram Thodla |

<table>
<thead>
<tr>
<th>Sources</th>
<th>Position</th>
</tr>
</thead>
</table>
Health Plans must give access to and reimburse immediate treatment of patients in emergency situations with any provider. |

<table>
<thead>
<tr>
<th>Alternative Position</th>
</tr>
</thead>
</table>
| ■ Constraint  
Health care during emergency should be treated in a increased co-payment basis with any provider. |

### Background and Arguments

When we define “emergency” as a possibly life threatening situation, the goal is to save lives. Many organizations are working toward a passage of national legislation that would require health plans to pay for emergency care received at any hospital.

47 states across USA have implemented a provision, known as a “prudent layperson” law, that requires the urgent nature of a patients condition to be judged according to his/her symptoms that led him to seek emergency medical care, rather than by the patient’s final diagnosis. But the system is subjective and open to loop holes. For example, a patient might think he/she is getting a heart attack but it could turn out to be indigestion. If any patient is treated according to his/her perception of symptoms, then the emergency ward would cater to a lot of excitable patients with wrong self-diagnosis.

Prudent layperson law has been adopted by the congress for medicare and medicaid beneficiaries. Medicare and Medicaid managed care plans also may not require prior authorization for emergency medical care. This could also extend to non medicare medicaid consumers. Many health plans currently extend emergency service coverage with an increased co-pay. This would deter patients from exaggerating their ailment and using emergency only when really required. Some health plans require notification within 24 hours of going to an emergency department, or the expenses will not be covered. Some require you to call your primary care physician first, unless the condition is life threatening. And emergency co-pay is not standardized. Some charge a flat fee others require the consumer to meet a deductible.

From a humane point of view, emergency health care, should be treated on a pre-determined standard fee basis till stabilization, and not be subject to extremely high prices as it is today. Stabilization, is again an intangible, difficult to define status. Health plans, providers and patients may have different views on what is “stabilized.” Instances of the emergency department coordinating post stabilization care with the health plan, which sometimes may not agree to cover recommended medical care, are one too many.

Hence, medical fee for emergency situations should be standardized, and health plans must cover emergency treatment from any provider.
Defining Statement

Project
Rethinking—DesignThinking—Health Care:
The Health Plan Role

Originator
Preethi Lakshminarayanan

Contributors

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 2007.</td>
<td>Matthew Gardner</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Kichu Hong</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Peter Rivera-Pierola</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Sriram Thodla</td>
</tr>
</tbody>
</table>

Sources


Question at Issue
To what degree should the benefit structure of Health Plans adapt?

Position

☐ Constraint
☐ Objective
☐ Directive

The benefit structure of a Health Plan should be determined within a limited framework based on service type and consumer health condition.

Alternative Position

☐ Constraint
☐ Objective
☐ Directive

The benefit structure of a Health Plan must be completely determined by the consumer according to income.

The benefit structure of Health Plan ought to provide complete coverage and health services to all consumers irrespective of financial capability.

Background and Arguments

Patient cost sharing is increasing and access to care has not improved as a result of higher cost per person. Choosing a particular health plan benefit structure is a very important part of determining health care coverage. Multi-tiered, simple to understand plans driven by individual preferences & decision making should be encouraged. The structure of the health plan should be modular, allowing people to make decisions and actively fashion their own list of benefits in consultation with a physician of choice, or a trained personal health planner.

Currently health plan structures are not very flexible and most often be chosen by employers with cost cutting goals. Many consumers do not have detailed knowledge of their coverages. Its only upon a medical emergency many identify limitations of their coverage like access to particular devices or drugs, to an allergist/immunologist or other specialists. Thus, providing a limited flexible framework for choosing a list of benefits that best suits a customer would be an practical alternative.

Eliminating choice by providing a universal list of benefits to every consumer for a certain basic pricing is another way to ensure primary health care. Currently universal health care is being experimented at local levels. The Commonwealth of Massachusetts is implementing a near-universal health care system by mandating that residents purchase health insurance by July 1, 2007. The City of San Francisco is also undertaking a universal health care system for uninsured residents. California, Maine, Vermont and Hawaii are also considering or seeking to implement universal or near-universal systems.

In the absence of a national mandate, benefit structures that offer options based on healthy behaviors and self-management should be encouraged. Benefits that vary by service type or patient condition, that use more efficient providers, and that vary by income can be innovated upon to arrive at patient centric benefit options.
The traditional care system was built on a relationship of trust that managed care seems to be disregarding by non-personalizing the health care experience. In view of Porter and Teisberg, "Health plans must become health organizations... participants in health, not just payers." Value added services are a great way of building consumer trust and a wholesome health care system.

Providing additional care to the elderly, the disabled, pregnant women and new mothers are some of the services that could be provided by health plans. The right services could be identified and provided for a nominal additional cost, either by health plans themselves or with federal aid, thereby involving the government on the fringes of the health care system. Certain services targeted at preventive care can be offered for free, to incent healthy living. Health plans participating in such initiatives can also look forward to reducing their risk in a concentrated and efficient manner. The rich data that health plans possess on their consumers, will help them offer more targeted information and service to patients.

On-demand personalized care services can also be provided. This would generate employment by institutionalizing a satellite health care system and increase health care access across the entire life cycle of care.

Involving related industries to invest in health through health plans (like gyms, health foods, cycling clubs, alcoholic anonymous, yoga, mental health, educational institutions, city marathons, restaurants etc) will help health plans provide better quality services. Providing a moderately complete list of benefits to every consumer for a certain basic pricing is another way to ensure primary health care.

Because health insurance is subscription based, value added services should be made available on temporary basis as needed by patients. The focus of value based health services are always centered on the consumer. Hence, value added services would also increase competition among various health plans based on right incentives and effective service to consumers.
Information technology is poised to streamline the process of obtaining, comparing, and distributing health care information amongst all key players in the industry. Barriers to a fully digital database include cost and complexity, cultural roadblocks, privacy issues, and the existing fragmented delivery system.

Some policies propose that the Federal Government create incentives and opportunities for health care providers, in an effort to modify work-flows and maximize IT adoption. Although in-house customized offerings can seem appealing, the reality of designing, building, implementing, and maintaining this kind of technology platform can sap the time, finances, and employee resources of health plans (Gordon). Health plans need third-party developers to cooperatively create a universal, standardized information system for optimum efficiency and performance. Ultimately, this creates an accessible repository for extracting the value-based parameters needed for encouraging competition.

Technology is the inevitable answer for the back-end system of maintaining and distributing health information, however, flexibility is the key to the front-end interaction. Although "tech-savviness" and internet use is on the rise, many individuals over the age of 60 (who often are in the most need of health care) are still struggling with the transition to a digital world. Therefore, it becomes essential that the system be accessible by any member within the health care system. This may require a full range of both traditional and progressive methods of user interface.

An important factor, and possible third party industry, arises in the transcription of analog or antiquated data to digital data ready for system integration. Regardless, adoption will be most rapid if each stakeholder can comfortably interact with the system. The ideal information database should start and end with the customers, informing and empowering them to make the best decisions possible concerning their health.

As Porter and Teisberg said, "Health plans must become health organizations... participants in health, not just payers." Having a unified information system gives every stakeholder equal opportunity for rapid access. Not only that, but it provides the data necessary to focus on value-based competition throughout the full care cycle.
Provider groups were originally formed to save costs, not provide increased value. Now, they do neither, instead shifting escalating costs back to the health plans, employers, and consumers. Providers have rapidly consolidated, thereby monopolizing the region and leveraging their bargaining power. Certain providers—particularly those perceived to have strong clinical reputations—continue to enjoy “must-have” status in health plan networks. Such status confers power to these providers and has triggered pleas from plans, purchasers and consumers for regulatory intervention (White, Hurley, and Strunk 2004). This leverage serves to not only increase costs, but to effectively eliminate competition and stifle innovation, creating a network of mediocre providers.

Provider groups add little to no value on a consumer level. Multiple physicians treating a patient rarely coordinate as a team, eliminating the entire purpose of networking and replacing it with administrative costs and paperwork. Just because the provider is in the network, does not mean that they are the best option for care. Patients are best treated by a hospital that is truly excellent in addressing their current condition (Porter & Teisberg 2006, 40). Even groups that are adequately assembled to cover a large range of conditions, cannot avoid the issues caused by strict contractual agreements, miscommunication, and a lack of competitive self-awareness.

Many plans have recognized and accepted their weaker position relative to providers, suggesting the recent lull indicates plans have found it in their interests to accommodate provider demands for higher payments, rather than resist them and possibly trigger a contract showdown (White, Hurley, and Strunk 2004). With this power, providers could conceivably take on an authoritative role and select which health plans to associate with based on their administrative capabilities and overall value. Ideally, relationships would be symbiotic, with health plans serving as the coordinating, information-gathering entity and the providers focused on simply delivering care.

Exclusive provider relationships trap consumers in networks that may not excel in providing appropriate care to individuals. Strong forces are created to refer patients within the group, further limiting competition on costs and results at the medical condition level (Porter & Teisberg 2006, 41). Even in the rare case that an individual is referred out-of-network, the approval process is so cumbersome that it discourages consumers from attaining proper care. Health plans should instead search out the best possible providers for the given medical conditions in question, thereby avoiding all the administrative hoops and focusing instead on excellence and experience. This strategy creates benefits throughout the service line: the consumer gets more effective care and is freed from extraneous network-related stresses; the excellent providers get more patients than the mediocre ones, thereby increasing learning and efficiency which decreases costs; finally, the health plans receive the cost cuts from providers, as well as from the reduction of administrative complexity. This all effectively serves to create trust in the system, and along with other measures, can increase the collective health for all its constituents.
Employer-sponsored health insurance is by far the most important source of health care coverage in the United States. In 2003, approximately 159 million non-elderly US residents received employer-sponsored health insurance (White, Hurley, and Strunk 2004). Employers have tough decisions to make when considering health plans for their employees. Selecting health plans is commonly a strictly financial decision between human resources and the company vice president or chief financial officer. Traditionally, employers have been more supportive of providers to protect their employees’ interests—namely choice of provider and access to medical services—and thereby undermined plans’ negotiating leverage with providers. But large payment rate increases for providers translate directly into premium increases for purchasers, and employers have been hit hard with double-digit premium increases over the past three years (White, Hurley, and Strunk 2004).

This phenomena has caused several reactions from employers. One result causes the employer to simply find the most economical plan available, often short-changing the employees in the process. The other common reaction, consumerism—the policy of requiring consumers to assume increased economic responsibility for their health care choices and (potentially) to bear a greater proportion of costs—is expected to expand rapidly in the next several years.

Employees, however, have been sure to share their opinions. For instance, the growth of preferred provider organizations (PPOs) has signaled an interest by employers both to broaden choices and transfer more responsibility to consumers while promoting more price sensitivity. PPO options with coinsurance, where patients pay a percentage of the total bill, can offer considerable transparency to consumers about covered benefits, provider networks and level of coverage based on the site of service. This process relieves plans of some decision-making burden and absolves them of some blame for high health care costs (White, Hurley, and Strunk 2004).

The optimal scenario involves both employer and employee cooperation. First of all, patients and their families, working with their physicians and advisers, need to accept more responsibility both as consumers of health care services and in managing their own health (Porter & Teisberg 2006, 316). Secondly, employers need to worry less about controlling provider practices and use their clout to create the right kind of competition in the system (Porter & Teisberg 2006, 310). Employers must support the health plans that excel at informing and supporting their employees and providers. Healthy and happy employees are more productive, and the high-value providers supported by these plans drive down costs through efficiency. To do this, employers must develop measures to track health value, using blinded data drawn from their own human resource records together with information from health plans and plan administrators (Porter & Teisberg 2006, 320). Employers can also add value by directly empowering their employees through educational sessions, fitness programs, financial incentives, and health information services (Porter & Teisberg 2006, 316-317).
Health plans are by far the best suited constituents for establishing a standardized measuring system for health care. Unlike any one provider, health plans have experience and data across many members, many providers, many individual physicians, multiple treatments, virtually all medical conditions, and over the full care cycle. Health plans should be able to measure and compare providers at the level of medical conditions (Porter & Teisberg 2006, 242).

Porter and Teisberg warn that some providers will resist greater health plan involvement in results measurement due to skepticism and potentially self-threatening data. In this new results-based relationship, collaboration and transparency are necessary in creating value competition.

There have been many past and ongoing attempts at measuring results in health care. They can be categorized into three classic quality measures: structures, processes, and outcomes. Structural indicators, like those proposed by The Leapfrog Group, are easy to measure, but do not necessarily relate back to the key outcomes of cost and clinical results. Validated process measures, as seen in the GAP project, are salient to both providers and consumers, however cost-benefit calculations vary from hospital to hospital. Outcomes-based measures, like the NHQC, featured inexpensive surveys to improve the patient experience, but had trouble relating back to more difficult measures like mortality; more complex evaluations require sophisticated risk adjustment.

Performance evaluators choose among various data sources to compile their reports. Administrative data, though easily obtained, does not contain enough pertinent information. Chart reviews, on the other hand, are more costly to obtain, but provide excellent information in both depth and breadth. Patient and provider surveys are in between for data collection costs, but are only truly beneficial to a short list of quality measures. Perhaps encouraging pervasive feedback protocols throughout the entire patient care cycle, would help collect a more holistic and comprehensive data set for analysis.

Sources support the stance that Health Plans need not reinvent performance evaluation, but simply borrow credibility from those already doing it. The most efficient strategy involves aggregating various credible results and repackaging them to be relevant and accessible to consumers in an effort of creating a more informed patient population. Health Plans could then compete on developing processes to make said public information more accurate and engaging to their membership. Furthermore, embracing current (and future) information technologies encourage the creation of powerful, flexible platforms to compile and distribute these performance reports to the full spectrum of health care stakeholders.
Function Structure

Employers

Communicating
- Report how employer premiums are spent
- Communicate employer-specific health benefits and values gained
- Communicate risk reduction recommendations
- Provide resources for improving employee health
- Communicate plan benefits
- Report plan usage
- Communicate provider quality
- Communicate potential cost benefits for risk reduction
- Communicate job-site environmental improvement

Facilitating
- Facilitate employer choice of health plan
- Facilitate employee decisions regarding treatment
- Facilitate employee decisions regarding provider choice
- Facilitate networking of small businesses to pool health resources
- Facilitate networking of employees for social support
- Facilitate education of Human Resources representatives

Assembling
- Correlate symptoms, diagnosis, location, and recovery data
- Identify and collect preventive health care practices
- Assemble results of preventive health care practices
- Correlate drug intake results
- Collect payment proportions of employers and employees
- Assemble patient demographics
- Assemble relevant lifestyle consumptions and activities
- Assemble feedback on state government performance

Communicating
- Communicate disease, allergy prevalence and environmental hazards
- Communicate effectiveness of preventative care
- Communicate range of prices for services and coverage
- Communicate health behavior recommendations for education
- Communicate patient recovery rates
- Communicate Medicare/Medicaid patients & procedures administered
- Communicate health plan performance
- Publish state government scorecards
Many medical professionals express skepticism at establishing a unified system for measuring performance due to the sheer number of factors that determine the success or failure of a particular treatment on an individual. Evidence-based medicine (EBM), also called scientific medicine, attempts to apply the standards of evidence gained from the scientific method to certain aspects of medical practice. The goal involves using evidence relative to the risks and benefits of treatment to make the soundest medical decisions possible. However, individual factors like quality and lifestyle are only partially subject to this form of analysis. Overall, there are mixed reports on its effectiveness. Controlled trials can be unethical and expensive, certain groups have been historically under-researched, and the quality of such studies ranges, often misleading the results. However, it seems to excel on an organizational level, where the overall functioning of a health care organization can be assessed against the best of currently-available evidence. This is perhaps the level at which equipment, players, and competitors can be evaluated with the most successful results.

Another potentially relevant trend to consider is the rise of online crowdsourcing as an efficient way to gather large amounts of qualitative information. By using the collective experiences & opinions of the masses, you could feasibly rule out negligible variables and establish norms.
Provisions for Employers

Health plans have a unique position in the current system as data collectors and assessors. Their core competencies are currently utilized simply to cut costs, but with modifications they can serve as the foundation for a universal health database. The problem lies in the public’s perception of insurance/payer organizations. They are distrusted, even vilified as inhumane, money-hungry entities who only care about the bottom line.

The ideal system requires the use of incentives to promote its value to all players. Competition alone can spark change once enough of the industry has already begun, however, it is essential to provide ample reason for the early adopters to shift. Health plans should restructure their business models to embrace transparency as a means of keeping their members healthy and saving costs over time by avoiding chronic ailments. To do this, all players must share the same level of authenticity. Accurate measures of provider quality are necessary to determine the best actions for any given patient/condition. Corrupt or inaccurate data may harm both the patient and the system as a whole.

Employers would gain to understand exactly how their employees are using their plan coverage, and what requested benefits are missing, thus keeping them healthy, happy, and productive. This can also extend beyond a single organization, comparing Employers to one another for a more inclusive view of status. Incentives can aid the adoption of compiling consistent, factual information for reporting to all relevant players.

Cloudy communication channels can create faulty information that discredits quality assessments, usage statistics, cost calculations, and restrains overall information exchange.

Health plans have a unique position in the current system as data collectors and assessors. Their core competencies are currently utilized simply to cut costs, but with modifications they can serve as the foundation for a universal health database. The problem lies in the public’s perception of insurance/payer organizations. They are distrusted, even vilified as inhumane, money-hungry entities who only care about the bottom line.

The ideal system requires the use of incentives to promote its value to all players. Competition alone can spark change once enough of the industry has already begun, however, it is essential to provide ample reason for the early adopters to shift. Health plans should restructure their business models to embrace transparency as a means of keeping their members healthy and saving costs over time by avoiding chronic ailments. To do this, all players must share the same level of authenticity. Accurate measures of provider quality are necessary to determine the best actions for any given patient/condition. Corrupt or inaccurate data may harm both the patient and the system as a whole.

Employers would gain to understand exactly how their employees are using their plan coverage, and what requested benefits are missing, thus keeping them healthy, happy, and productive. This can also extend beyond a single organization, comparing Employers to one another for a more inclusive view of status. Incentives can aid the adoption of compiling consistent, factual information for reporting to all relevant players.

Cloudy communication channels can create faulty information that discredits quality assessments, usage statistics, cost calculations, and restrains overall information exchange.

Health plans have a unique position in the current system as data collectors and assessors. Their core competencies are currently utilized simply to cut costs, but with modifications they can serve as the foundation for a universal health database. The problem lies in the public’s perception of insurance/payer organizations. They are distrusted, even vilified as inhumane, money-hungry entities who only care about the bottom line.

The ideal system requires the use of incentives to promote its value to all players. Competition alone can spark change once enough of the industry has already begun, however, it is essential to provide ample reason for the early adopters to shift. Health plans should restructure their business models to embrace transparency as a means of keeping their members healthy and saving costs over time by avoiding chronic ailments. To do this, all players must share the same level of authenticity. Accurate measures of provider quality are necessary to determine the best actions for any given patient/condition. Corrupt or inaccurate data may harm both the patient and the system as a whole.

Employers would gain to understand exactly how their employees are using their plan coverage, and what requested benefits are missing, thus keeping them healthy, happy, and productive. This can also extend beyond a single organization, comparing Employers to one another for a more inclusive view of status. Incentives can aid the adoption of compiling consistent, factual information for reporting to all relevant players.

Cloudy communication channels can create faulty information that discredits quality assessments, usage statistics, cost calculations, and restrains overall information exchange.
Health plans, particularly the insurance/payer components, are often vilified for being overly callous and financially oriented; potentially breeding patients’ distrust of Health Plans as a feedback repository.

The new roles for health plans involve a radical transformation not only in their relationships with subscribers and providers but also in the internal culture that is needed (Porter, Teisberg 2006, 280). The unfortunate legacy of health plans is one of denial, particularly for claims and choice. Although they’re trying to move away from this culture, many are still based on maintaining provider networks and constraining choice in an effort to cut costs.

To shed these negative perceptions, health plans must focus on providing responsive, consistent, and honorable services. Much of this movement involves reconnecting with members and ensuring health benefits through candid interaction. Members should feel that contributing to health plan-run feedback systems will prove productive in their favor. Health plans can gain this trust through incentives, customized efforts, and health-based results.

The eventual goal being to transform the health plans from financial companies to health advisory institutions.

Assemble employee feedback

Patients may not trust Health Plans as feedback depositories

Rethinking—Design Thinking—Health Care: The Health Plan Role

Provisions for Employers

Assembling

Peter Rivera-Pierola


Personal Observation

Translate feedback to benefits/results

Reward valuable feedback

Reward continuous feedback

Plan Discount Options

Custom Plan Points

Serial Suggester Benefits

Honorary Board Member
Many organizations already publish health reports about everything from trends and best practices to product prevalence and distribution. The problem with these general, census-like reports is that they may not necessarily be relevant enough to satisfy today’s fickle stakeholder. Suppliers, for example, would benefit from information that Health Plans could gather concerning product performance and distribution within their patient membership. Generic health trend reports and product sales figures may not always be useful to all Suppliers. Some may prefer more targeted, contextual reports about a particular piece of medical equipment, or within a specific market or region; all information that can be easily obtained by Health Plans. It becomes a matter of achieving quality, not quantity in results. This specific information could be further concretized through the use of cross-stakeholder consultants to facilitate the adoption and comprehension of tailored reports. Porter says “The health plan is arguably the entity in the best position to aggregate information on the patient’s full cycle of care...” (Porter, Teisberg 2006, 252) due to their involvement with such a wide variety of health care professionals. An open dialogue must be established to achieve relevancy across the health care industry. This way, each stakeholder can get exactly what they need to improve care-giving and to advance value-based competition.
Health plans are in the tricky situation of needing to become full-fledged health institutions, while shedding their vilified image. Much of this negative connotation comes from forceful penny-pinching tactics and inadequate communication. If health plans want to create healthier dialogues with patients, they must first earn back that lost trust.

Transparency and honesty are key factors in trust-building for health plans. Health plans must work hard to ensure the accuracy and reliability of their clinical outcomes data, and take care to distinguish where valid information exists and where it is not yet well enough developed (Porter, Teisberg 2006, 275).

Expert groups, possibly of third party origin, could be created to both collect and monitor valuable and relevant information on products, services, and stakeholders. Health plans could leverage these third parties and serve as data compilers, collecting only approved and highly reliable information to distill and distribute to the appropriate audiences. This puts them in direct control of what is published, and allows them to customize their outputs for each stakeholder. This personalized consideration, coupled with reputable regulators, creates a trusted source for health care information.

The democratization of information allows anyone to share their opinion, often leading to questionable sources and misinterpretation.
Currently, relationships between health plans and other industry stakeholders could be described as "adversarial." Not only does this go against the collaboration needed to reform the health care system, it also creates a stigma that takes time and effort to remove.

Health plans cannot just simply mandate at their whim for fear of intensifying present animosity. Rather, health plans should leverage their strengths and support other stakeholders in information sharing and incentive promotion. Porter agrees that "the health plan is in the best position to help the patient navigate the care cycle" (Porter, Teisberg 2006, 252). They are responsible for making sure that the experience is smooth and seamless and that all information is transferred appropriately. The same can apply for peers and other industry stakeholders.

Facilitation efforts could be made on behalf of health plans to assist weary adopters entering a reformed system. This can be accomplished through personalized consultations and awareness programs set on encouraging open dialogues between stakeholders. The other half of this involves delivering value and fulfilment for participation; in other words, offering tangible incentives and results. Establishing proper communication channels will allow parties to determine the appropriate incentive criteria desired by each industry player.

Players may be unwilling to participate

Design Strategies

Mandatory Usage Tracking
Impromptu Inspections
Anonymous Employee Hot-line
Health Improvement Program
Workplace Improvement Consultant

Solution Elements

M Mandatory Usage Tracking
E Anonymous Employee Hot-line
M Health Improvement Program
M Workplace Improvement Consultant

Version: 1  Date: 13 December 2007  Date of Original: 13 December 2007
### Design Strategies
- Provide more methods of control
- Offer immediate incentives to participants
- Calculate “true cost” over time

### Solution Elements
- S Pitfall Tracking & Identification
- S Rotating Benefits Package
- M Competitor Benefits Matching
- M Resource/Benefits Audit
- S Co-Alignment Declarations

### Observation
The transition from the current system to a reformed, collaborative, and transparent one will take time and resources. To many, these costs will outweigh the eventual benefits of adoption.

### Extension
Although setting up electronic platforms for information exchange can be costly up front, both in price and adoption speed, the eventual benefits trump the immediate costs. Porter supports this by saying that “Electronic transactions have major benefits in cost, accuracy, and reduction of claims disputes,” and The introduction of electronic medical records will further simplify transactions and reduce the need for redundant information (Porter, Teisberg 2006, 267).

Information technology will allow patients to share their records with relevant stakeholders at their discretion. But before that can happen, the appropriate foundation must be laid; namely the standardization of forms, definitions, and interfaces. Reaching agreement on these criteria will be a challenge, but once set forth, the industry will have to play catch up with the brave few. Collaboration with a trusted third party could also expedite adoption and ensure security and authenticity of the data collected.

Much like with many reforms, incentives must be in place to encourage swift and ample participation. Immediate incentives like rewards, discounts, or competitive matching could ease stakeholder hesitation. Services that could help determine the true cost of adoption over time, can help put options into perspective, and allow players to make informed decisions on reformation.
Rethinking—Design Thinking—Health Care: The Health Plan Role

Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Source</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Associated Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>54. Communicate employer-specific health benefits and values gained</td>
</tr>
<tr>
<td></td>
<td>56. Provide resources for improving employee health</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Solution Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicating</td>
<td>M. Annual Health Report</td>
</tr>
<tr>
<td></td>
<td>S. Health Progress Report</td>
</tr>
<tr>
<td></td>
<td>S. Plan Member Workshops</td>
</tr>
<tr>
<td></td>
<td>M. Health Improvement Program</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Originator</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Rivera-Pierola</td>
<td>Simply providing information is not enough; there is too much of it available. Health plans must find ways to compel patients to take more responsibility for their own health.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contributors</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health plans must conquer many mind-set barriers to adopt this new role as health institutions. One is that consumers are not sophisticated enough to deal with health care decisions; which consumers are already proving invalid (Porter, Teisberg 2006, 279). As information expands, it becomes necessary for health plans to foster the growth of patient responsibility and empowerment. But simply making the information accessible is not enough.</td>
</tr>
<tr>
<td></td>
<td>Health information must be compelling, relevant, and aimed at individuals at the condition level. Patients would benefit from receiving contextual information as it relates to their current stage in the care cycle. Health plans could strive to understand their patient memberships, and deliver results that matter to them, when they matter.</td>
</tr>
<tr>
<td></td>
<td>Education plays a huge role in patient empowerment. Information accessibility is critical, but so is its delivery and application. Collaborative sessions with patients could advance comprehension and encourage retention of health awareness issues. Ultimately, by empowering the consumer base, the industry can look forward to serving educated patients capable of making informed health decisions.</td>
</tr>
<tr>
<td><strong>Design Factor</strong></td>
<td><strong>Health history may be incomplete</strong></td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td><strong>Project</strong></td>
<td>Rethinking—DesignThinking—Health Care: The Health Plan Role</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>Provisions for Providers</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Communicating</td>
</tr>
<tr>
<td><strong>Originator</strong></td>
<td>Matthew Gardner</td>
</tr>
<tr>
<td><strong>Contributors</strong></td>
<td>John Pipino November 2007</td>
</tr>
</tbody>
</table>

**Observation**

Over the course of their lifetime, many patients have seen multiple primary care physicians, and probably some additional specialists. Each provider has their own records about an individual patient, and they have not been centrally located.

**Extension**

In every record there is the possibility for missing information. This missing information can of two kinds. Either the information is missing because it is recorded elsewhere, or it is missing because it was never recorded. As the US medical system migrates toward electronic medical records, and personal health records, missing information will become a problem. In the system we envision, we need to ensure that there are ways to help consolidate multiple records that have in the past been disparate.

Electronic Medical Records are coming online. These records need to be able to be added to, and need to be accessible to multiple other systems. Either that, or they need to be able to be accessed by appropriately secure systems.

<table>
<thead>
<tr>
<th><strong>Design Strategies</strong></th>
<th><strong>Solution Elements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitate entry of health data an entry point</td>
<td>( S ) New Health History Data Information Field</td>
</tr>
<tr>
<td>Consolidate an individual's medical records</td>
<td>( S ) Health History Consolidation Service</td>
</tr>
<tr>
<td>Link disparate records so all can be accessed</td>
<td>( S ) EMR Network</td>
</tr>
</tbody>
</table>
While having a complete medical history can be helpful, there may be instances when a patient may want to restrict data or when it is in the best interest of the patient for data to be restricted.

Despite years of training, doctors do make mistakes. In some instances, those mistakes, such as misdiagnosis, travel with the patient from specialist to specialist. Each successive doctor builds his or her case on the previous doctor's diagnosis.

Patients themselves do not have the understanding about what information is beneficial to restrict, so they shouldn't be allowed to put limitations on their information.

The only people trained and qualified to make decisions about what information to view are doctors. But are the doctors wise enough to filter potentially incorrect information? Possibly the most harmful information is the diagnosis, which a doctor's analysis of information/data/symptoms.

**Design Strategies**
- Restrict physician access
- Hide previous diagnosis
- Get doctor to think outside the box

**Solution Elements**
- Access lock
- Previous diagnosis screen
- Alternate possibilities prompt

**Sources**
**Design Factor**

<table>
<thead>
<tr>
<th>Project</th>
<th>Rethinking—<em>Design Thinking</em>—Health Care: The Health Plan Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Provisions for Providers</td>
</tr>
<tr>
<td>Activity</td>
<td>Communicating</td>
</tr>
<tr>
<td>Originator</td>
<td>Matthew Gardner</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
</tbody>
</table>

**Observation**

Within a competitive environment many more entities than just the entity being reviewed are interested in seeing how the reviewed entity scored. It is necessary to build in ways for all interested parties to see how the reviewed entity did.

**Extension**

The challenge with reviews is publishing them in such a way that the people who need to see them see the right amount of information. Each person is interested in reviews for different reasons. Providers themselves are interested in seeing what they can do better and in learning how to do it better. The overseeing bodies are interested in seeing improvement. Consumers want to see the information that will help them make positive decisions regarding which providers to use.

How does a rating system tailor the output to meet the different needs to different parties? An individually published and unique document would be expensive and impractical. It would be a challenge to maintain a correct database of who wants what, and where they want it delivered too.

**Design Strategies**

- Shift responsibility of finding to those interested in scores
- Discover interested parties and provide special permission to them for E-database

**Solution Elements**

- M Publicly available provider quality report
- S Invited access to electronic provider quality database

**Sources**

Personal Observation

**Associated Functions**

41 Communicate provider scorecard

**Personal Observation**

Matthew Gardner
Healthy individuals can’t predict depth of coverage needed

Observation
Healthy individuals are unable at the enrollment period to determine what level of coverage they will need through the course of enrollment.

Extension
Regular maintenance on a car engine helps prolong engine life, but does not completely alleviate risk for large and expensive repairs. The same is true for the human body. As with cars, physical accidents can occur in which the human body is damaged and needs repair. These kinds of accidents are unpredictable.

On a slightly more predictable level, each body is a result of genetic programming. The more proficient we become at correlating genetic makeup with diseases, disorders, and tendencies, the more we will be able to predict what kind of care an individual would need. And regardless of the correlation, it may still be nearly impossible to predict if the genetic disease will show itself during the enrollment period in question.

Family history is a common predictor of risk because of the accessibility of the information, but people are generally not aware of or don’t understand the implications that family history has on their own health.

When people are aware of the conditions that they have been diagnosed with and are being treated for, they may not take the costs of everything (i.e., Drugs, tests, procedures) into account when they are selecting the level of coverage that will optimize the coverage they need and the out of pocket expenses.

Design Strategies
- Procure more information
- Assess risk tolerance and fiscal health
- Make suggestions based on personal information

Solution Elements
- Disease likelihood genetic examination
- Family health record links
- Medical investment test
- Provider Preferences questionnaire
- Coverage level recommendation generator
The health plan has multiple points from which it could gather feedback from plan members on its performance. Each of those moments must be assessed to discover at which points they can glean the most useful information.

Health plans need to be concerned about the care they provide to their plan members. This naturally results in a desire to get information back from them, and particularly at times when that feedback will be the most relevant.

There is a fine line between gathering what is useful and gathering what is excessive. Naturally the health plan must conduct a an audit to assess the incremental margin to be gained through conducting extra feedback requests. The health plan might find that there is a certain breaking point where conducting more feedback would be worthless. On the other hand, they might find that the extra effort translates into positive emotions and trust in the health plan.

Second, the health plan should assess the different points at which it could gather feedback, and try to align those points with the natural touch points, such as phone calls, billing cycles, and visits to the web site.
## Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Rethinking—<em>Design Thinking</em>—Health Care: The Health Plan Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Provisions for Employers</td>
</tr>
<tr>
<td>Activity</td>
<td>Assembling</td>
</tr>
<tr>
<td>Originator</td>
<td>Matthew Gardner</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
</tbody>
</table>

### Observation

Currently there are multiple sources of provider evaluation. All of these different sources are confusing to consumers, who are not knowledgeable about what criteria drive the scoring.

### Extension

Dr. Loeb presented on the state of provider reviewers. In her presentation she listed no fewer than 12 different entities that are currently involved in grading providers. The different entities grade different types of providers (hospitals versus physicians) and score them differently. This first group of scoring entities may be best qualified to score providers, but according to Porter they have their shortcomings.

Another group scoring entities are the many online doctor rating sites, such as www.ratemds.com, www.healthgrades.com, and scores of others. While these sites are well intended, the sheer number of them has resulted in a lack of useful information in any one location. Additionally, the information on these sites is generated at will, meaning that their scores may be biased toward very high or very low ratings; people seek out rating sites when they either have good experiences or bad experiences.

### Design Strategies

- Combine existing professional third party scores
- Combine ratings from multiple sights

### Solution Elements

- **S** Weighted Provider Score Mashup
- **M** PriceGrabber for Providers

### Sources

- Dr. Barbara Loeb, MD, Presentation Sept. 2007.
- Personal Observation

**Personal Observation**

Data points may come from multiple parties.
### Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Employees have limited knowledge of health/medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rethinking—Design Thinking—Health Care: A Health Care Framework for Health Plans</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Sources</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Associated Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitating</td>
<td>64 Facilitate employee decisions regarding treatment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Originator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew Gardner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contributors</th>
</tr>
</thead>
</table>

### Design Strategies

- Provide education
- Advise employees

### Solution Elements

- **M** Condition Specific Workshops
- **S** Personal Health Adviser
- **S** Online Medical Encyclopedia/dictionary/reference

### Observation

The average person does not have an in-depth understanding of medicine and health care. How can a person be expected to make positive choices about health care with such basic levels of understanding about medicine?

### Extension

As Porter says "The idea that patients can or should become medical experts and direct their own care is misguided and unrealistic" (Porter, 246). Of course the primary educator about health care and medicine should be the physician, who has completed long years of schooling and has practiced in the field, but health plans also have a role in educating their plan members.

It is therefore important that while the care delivered to the patient be chosen by the patient (to drive competition), the patient should receive help to make informed choices. The patient needs help from the physician and whatever additional sources of information available.

For the most part helpful sources are disparate and inaccessible. If the Health Plan (also motivated by the patient's good health) were to help inform the patient, it could serve as a reliable and easily accessible source of information.
## Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rethinking—DesignThinking—Health Care: The Health Plan Role</td>
<td>Image Source. &quot;Philips Medical Systems Realizes Efficiencies Through Accessibility In Accounting Department.&quot; <a href="http://www.imagesourceinc.com">www.imagesourceinc.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Associated Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisions for Providers</td>
<td>44 Notify provider of payment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Solution Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicating</td>
<td>S Electronic Communication Switchboard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Originator</th>
<th>Design Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matthew Gardner</td>
<td>Limit number of systems</td>
</tr>
<tr>
<td></td>
<td>Standardize communication between systems</td>
</tr>
<tr>
<td></td>
<td>Adopt as part of HP services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contributors</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A lot of human effort is required to properly document the flow of payment. Photocopies or scans of checks and credit card receipts must be made. Older processes use a lot of paper, and require space to store, and resources to access again. Even when records are kept electronically, there must be a manual input into the system. This may mean that there is a human input when a bill is paid by the Health plans and possibly another human input when that payment is received and recorded.</td>
</tr>
<tr>
<td></td>
<td>Within recent years there has been a push to have all data transferred electronically. A number of systems exist; each office or hospital may use its own proprietary system, or one of a number of third party systems.</td>
</tr>
</tbody>
</table>
Design Factor

**Project**
Rethinking—DesignThinking—Health Care: The Health Plan Role

**Mode**
Provisions for Providers

**Activity**
Evaluating

**Originator**
Kichu Hong

**Contributors**
Oct. 2007. Matthew Gardner
Oct. 2007. Preethi Lakshminarayan
Oct. 2007. Peter Rivera-Pierola
Oct. 2007. Sriram Thodla

**Observation**
Most of physicians get more job satisfaction with concentrating on medical practices than with conducting administrative work. Although physicians don’t want to spare much time for administrative work, physicians, particularly in solo practice need to do administrative work including making and confirming claims.

**Sources**


Personal Observation

**Extension**
According to 2004 CFPC/CMA/RCPSC National Physician Survey, percentage of the total number of hours spent on either committee or administrative work was varied by their fields of medicines, as lowest from 0.2% of immunologists and allergists to the highest of 40.4% of family physicians.

According to results from the physician worklife study in 2002, physician job satisfaction increases with concentrating on medical practices in contrast to conducting administrative work.

These two factors suggest that physicians need to do certain administrative work, but they don’t want to spare much time on it. As health plans gather major information from provider claims data, health plans can help physicians to facilitate administrative workflow by making it as easier and simpler as possible for them, particularly, physicians in solo practice. By physicians’ implementing the administrative kit, health plans can also benefit from more efficient and faster data flow with them. The kit should include informative materials for physicians to use and can provide periodical education about updated system and other relevant issues.

**Design Strategies**
- Make workflow simple as possible
- Clarify terms used in workflow
- Provide informative materials
- Provide periodical education

**Solution Elements**
- Physician Admin Kit
- Online Admin Training

**Associated Functions**
- 24 Assemble claims data for provider report card
- 29 Verify provider claims
### Design Factor

**Project**
Rethinking—*Design Thinking*—Health Care: The Health Plan Role

**Mode**
Provisions for Providers

**Activity**
Assembling

**Originator**
Kichu Hong

**Contributors**
Oct. 2007. Matthew Gardner  
Oct. 2007. Preethi Lakshminarayanan  
Oct. 2007. Peter Rivera-Pierola  
Oct. 2007. Sriram Thodla

**Observation**
It is very difficult to track individual behaviors due to privacy issues. Means of tracking are not defined and tracking is costly and time consuming activity for health plans. Self-reporting is one possible solution for tracking user health behaviors, but it can provide biased information.

#### Design Strategies
- Find and access to information sources
- Efficiently use time and money
- Data credibility?

#### Solution Elements
- Behavior Self Report
- Self Checkup Guide
- Pervasive Scheduler
- Regular Checkup
- Behavior Audit
- Credibility Scoring
- Validate Member Data

### Sources

- Conference call - Jane Rollinson  
- Personal Observation

### Associated Functions

21 Assemble patient health behavior profile

### Extension
User behavior is an important factor that determines individual’s health. In many cases, patients who fail to follow proper procedures directed by their physicians end up developing worse chronic states such as obesity and diabetes. Patients should take responsibility for their recovery from diseases.

Because it is very difficult to track all individual patients’ behavior and also it is time and money consuming activity, means to gather reports from patients should be considered. For example, patients can be encouraged to do self-reporting if there are incentives or rewards for it. Also, easy and user-friendly means for reporting should be provided. However, self-reporting can provide biased information and data gathered from self-reporting cannot guarantee credibility. Also, it should be considered that patients who are willing to submit the reports are those who are more likely to follow physicians' advice. They are possibly more willing and diligent patients.

Random auditing of user behaviors and checkups with agents can help to increase data credibility. Privacy issues of users should be considered. Combined with these elements, it is possible to track patient health behavior at certain degree, providing useful sources for providers and generally enhancing health standards.
### Design Factor

**Project**  
Rethinking—DesignThinking—Health Care: The Health Plan Role

**Mode**  
Provisions for Suppliers

**Activity**  
Communicating

**Originator**  
Kichu Hong

**Contributors**

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 2007</td>
<td>Matthew Gardner</td>
</tr>
<tr>
<td>Oct. 2007</td>
<td>Preethi Lakshminarayanan</td>
</tr>
<tr>
<td>Oct. 2007</td>
<td>Peter Rivera-Pierola</td>
</tr>
<tr>
<td>Oct. 2007</td>
<td>Sriram Thodla</td>
</tr>
</tbody>
</table>

**Observation**

Trend analysis needs professional expertise. Analyzing data and publishing this data require specialized skill sets.

**Extension**

The term "trend analysis" refers to the concept of collecting information and attempting to spot a pattern, or trend, in the information. Trend analysis is often used to predict future events (Wikipedia).

Trend analysis provides valuable information for predicting market needs for suppliers to plan strategies and research and produce medical equipment and drugs. Also, the health care industry can benefit from suppliers' more accurate investment in R&D for new technology.

However, trend analysis often involves long period of research from collecting, compiling and analyzing data to making graphs, diagrams and other statistical materials. It needs time, money and expertise. Health plans have accumulated data, but analyzing data should be conducted by professional groups in order to generate more accurate data. The selection of a strategy for analyzing trend data will depend in part on the purpose of the analysis, and on careful consideration of regarding issues (D. Rosenberg). Health plans can build more credible data by outsourcing expert groups for generating and publishing trend reports.

**Design Strategies**

- Sort out accumulate data
- Efficiently use time and money
- Data analysis accuracy
- Generate reports in various forms
- Publish reports through various media

**Solution Elements**

- **E** Offshore Analysis
- **S** 3rd Party Data Audit
- **M** Online Report Library
- **M** Print publishing
- **S** Reports Sale

---

**References**

1. Provisions for Suppliers
2. Trend analysis needs professional expertise. Analyzing data and publishing this data require specialized skill sets.
3. The term "trend analysis" refers to the concept of collecting information and attempting to spot a pattern, or trend, in the information. Trend analysis is often used to predict future events (Wikipedia).
4. Trend analysis provides valuable information for predicting market needs for suppliers to plan strategies and research and produce medical equipment and drugs. Also, the health care industry can benefit from suppliers' more accurate investment in R&D for new technology.
5. However, trend analysis often involves long period of research from collecting, compiling and analyzing data to making graphs, diagrams and other statistical materials. It needs time, money and expertise. Health plans have accumulated data, but analyzing data should be conducted by professional groups in order to generate more accurate data. The selection of a strategy for analyzing trend data will depend in part on the purpose of the analysis, and on careful consideration of regarding issues (D. Rosenberg). Health plans can build more credible data by outsourcing expert groups for generating and publishing trend reports.
## Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Consumers do not willingly provide feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rethinking—DesignThinking—Health Care: The Health Plan Role</td>
<td></td>
</tr>
</tbody>
</table>

### Mode

- Provisions for Providers

### Activity

- Assembling

### Originator

- Kichu Hong

### Contributors

- Oct. 2007. Preethi Lakshminarayan
- Oct. 2007. Peter Rivera-Pierola
- Oct. 2007. Sriram Thodla

### Observation

Feedback from the consumer can provide valuable resource for improving performance of the health plan and other stakeholders.

### Extension

Consumer feedback can provide valuable resources for improving performance of health plans and other stakeholders. However, we can't just expect to receive feedback from consumers automatically. Although by improving its performance, the health plan will eventually reward consumers, but in many cases consumers do not willingly provide feedback.

Health plans can properly reward consumers for their feedback to incentivize them. Also health plans should provide a system that consumers can easily access to and easily use to provide feedback. Considering that not all consumers use internet to share the information, multiple channels such as call centers and personal representatives should be used. Examples of rewards are custom points similar to millage programs and discount of memberships and they should be selected carefully.

### Design Strategies

- Provide easy way to deliver feedback
- Contact consumers through multiple channels
- Provide reward for valuable feedback

### Solution Elements

- Online Feedback DB
- Health Record Blog
- Customer Call Center
- Self Reporter Awards
- Custom Plan Points
Design Factor

Project
Rethinking—DesignThinking—Health Care: The Health Plan Role

Mode
Provisions for Providers

Activity
Assembling

Originator
Kichu Hong

Contributors
Oct. 2007. Matthew Gardner
Oct. 2007. Preethi Lakshminarayanan
Oct. 2007. Peter Rivera-Pierola
Oct. 2007. Sriram Thodla

Design Strategies
Use multiple channels
Provide offline contact points

Observation
Internet covers vast area of information sharing, but not all of us don't use internet as a primary information sharing and some can’t use it at all.

Sources
Team deliberations

Associated Functions
21 Assemble patient health behavior profile

Extension
Enhanced information transparency is considered as a key factor that can resolve multiple problems residing in the current health care system by reducing medical problems and increasing value-added competition. Internet is the major tool to store, share, and communicates information amongst multiple users. It is fast, efficient, and also cost-effective tool. However, not all people can use internet properly. Some don’t have internet access at locations, and some don’t know how to use it. In order to provide proper access to various users, health plans should introduce and use multiple channels including traditional media, and new media such as mobile phones, text messages to share information, and thus increase information transparency.

Solution Elements

S Pervasive Scheduler
S Self Checkup Guide
M Text Message
E Print Publishing
S Community Facilitator
E Customer Call Center

Version: 1
Date: 14 October 2007
Date of Original: 14 October 2007
Design Factor

**Project**
Rethinking—DesignThinking—Health Care: The Health Plan Role

**Mode**
Provisions for Employers

**Activity**
Assembling, Evaluating

**Originator**
Kichu Hong

**Contributors**
Oct. 2007. Matthew Gardner
Oct. 2007. Prerithi Lakshminarayan
Oct. 2007. Peter Rivera-Pierola
Oct. 2007. Sriram Thodla

**Observation**
Multiple data, sources and channels exist, but not all data is credible, so health plans need to find ways to measure data credibility.

**Extension**
Patient health behavior can affect patient recovery and also healthy living standard. Follow-ups after doctor visit can be more important than actual treatment. The patient health behavior tracking, as mentioned in earlier design factor(18), is very difficult and gathered data may not be credible. Also, other aggregated data from 3rd party evaluations and reports can be incomplete, and not fully credible. Health plans should set criteria and method to validate data. This includes credibility scoring by set metrics, and comparison with previous data or benchmark data. Viewing data from multiple perspectives and measuring the credibility, health plans can generate comparably more complete and valuable information.

**Sources**
Team deliberations

**Associated Functions**
21 Assemble patient health behavior profile
35 Evaluate user feedback of health treatment

**Design Strategies**
- Set criteria for data credibility
- Score data by value-weighting
- Set data sets for comparison

**Solution Elements**
- Credibility Scoring
- Validate Member Data
- Benchmark Comparison
## Design Factor

### Project
- Rethinking—DesignThinking—Health Care: The Health Plan Role

### Mode
- Provisions for Providers

### Activity
- Evaluating

### Originator
- Kichu Hong

### Contributors
- Oct. 2007. Preethi Lakshminarayan
- Oct. 2007. Peter Rivera-Pierola
- Oct. 2007. Sriram Thodla

### Observation
- It is difficult to verify correct and comprehensive cost of providers due to the lack of set comparable medical fees.

### Extension
- To avoid unnecessary costs paid providers and eventually reduce the overall cost in the health care system, verifying correct and comprehensive cost is important. The fact that there is no defined medical fees makes it more difficult. Medical fees for the same medical procedure differ by regions, by providers, and it is not clear how to define quantitative medical fees.

However, construction of comparable data profiles is possible. It is important for health plans to know the general ranges of medical and doctor fees. Also, health plans should consider if there was any unnecessary medical procedures added to finalize verification. Patient surveys can provide helpful insights for how patients recognize medical fees.

### Design Strategies
- Classify data into groups by medical procedures
- Compare data within groups
- Examine procedural alternatives

### Solution Elements
- Medical Fee List
- Doctor Fee Charts
- Claims Database
- Alt Diagnosis Prompt
- Alt Practice Survey

### Sources
- Team deliberations

### Associated Functions
- Verify correct & comprehensive cost

---

**Version:** 1  
**Date:** 15 October 2007  
**Date of Original:** 15 October 2007
## Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Rethinking—DesignThinking—Health Care: The Health Plan Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Provisions for Providers</td>
</tr>
<tr>
<td>Activity</td>
<td>Evaluating</td>
</tr>
<tr>
<td>Originator</td>
<td>Kichu Hong</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
<tr>
<td>Oct. 2007.</td>
<td>Matthew Gardner</td>
</tr>
<tr>
<td>Oct. 2007.</td>
<td>Preethi Lakshminarayanan</td>
</tr>
<tr>
<td>Oct. 2007.</td>
<td>Peter Rivera-Pierola</td>
</tr>
<tr>
<td>Oct. 2007.</td>
<td>Sriram Thodla</td>
</tr>
<tr>
<td>Observation</td>
<td>The overall health care cycle can be affected by previous health care histories, however, it is not easy to track previous records.</td>
</tr>
</tbody>
</table>

### Design Strategies
- Build credible database
- Track previous history data
- Protect personal data

### Sources

### Associated Functions
- 34 Evaluate user health care cycle in relation to provider

### Extension
Because information sharing amongst different health plans as well as providers are not so active or efficient, it is difficult to get data regarding patient previous health care histories when they change plans or doctors. Individual health care histories are valuable information to improve the entire health care cycles and overall health standards. In order to keep records without losing some, advanced technology is required.

Claims database is the major information repository that stores resources to understand overall members’ health care cycles. Other information technology and online information sharing will be quickly developed.

While access to the past information being important, protecting and preserving information is also important.
### Design Factor

**Project**
Rethinking—Design Thinking—Health Care: The Health Plan Role

**Mode**
Provisions for Suppliers

**Activity**
Assessing

**Originator**
Sriram Thodla

**Contributors**

<table>
<thead>
<tr>
<th>Design Strategies</th>
<th>Solution Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot multiple studies</td>
<td>M Supplier - Health plan tests</td>
</tr>
<tr>
<td>Analyze health plans using a supply chain lens</td>
<td>M Health plan - Supplier analytic group</td>
</tr>
<tr>
<td>Study the supplier side of the equation</td>
<td></td>
</tr>
</tbody>
</table>

**Sources**

**Personal Observation**

**Observation**
It is hard to identify which metrics should be tracked when trying to measure the effectiveness of health plan interactions with suppliers.

**Extension**
To understand the operational effectiveness of the interactions between suppliers and health plans, we will need to create a scorecard. To effectively create a scorecard, we need to identify the metrics that are the most appropriate. However, doing so is hard when there is no clear hierarchy of metrics - that there are no obvious metrics that stand out among the hundreds that can be measured.

The problem here is one of creating a hierarchy of metrics (not unlike something already done in the retail and supply chain industries). This hierarchy of metrics will directly correlate the metrics to a specific operational improvement such as the reduction of cost, the speeding up of a delivery etc.
<table>
<thead>
<tr>
<th>Design Factor</th>
<th>Uncertain drug effectiveness thresholds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
<td>Rethinking—DesignThinking—Health Care:</td>
</tr>
<tr>
<td></td>
<td>The Health Plan Role</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>Provisions for Suppliers</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Assessing</td>
</tr>
<tr>
<td><strong>Originator</strong></td>
<td>Sriram Thodla</td>
</tr>
</tbody>
</table>

**Observation**

There are no standard ways of ensuring the effectiveness (not efficacy) of drugs since many potential problems may surface after the drug has been released to the mass market (ex. Vioxx).

**Extension**

While stringent regulations are in place by the FDA before approving drugs for sale, there are still numerous situations where drugs with dangerous side effects are released to the market. There is simply no way to ensure that the drug is 100% effective and completely safe during trials. However, there needs to be a way to detect early enough, any serious issues that arise after the drug has gone to market.

The health plans in combination with the providers are in the best place to assess this since repeated health problems that arise from the administration of drugs can be detected by analyzing the claims management system.

**Design Strategies**

- Improve supplier to health plan cooperation
- Analyze the claims data

**Solution Elements**

- M Dedicated supplier exchange group
- M Data analysis
- S Supplier Collaboration Peer Forum

---

Sriram Thodla


Provisions for Suppliers: Assess long term drug effectiveness

While stringent regulations are in place by the FDA before approving drugs for sale, there are still numerous situations where drugs with dangerous side effects are released to the market. There is simply no way to ensure that the drug is 100% effective and completely safe during trials. However, there needs to be a way to detect early enough, any serious issues that arise after the drug has gone to market.

The health plans in combination with the providers are in the best place to assess this since repeated health problems that arise from the administration of drugs can be detected by analyzing the claims management system.
### Design Strategies

- Evaluate security frequently
- Secure plan member information
- Distribute plan member information

### Solution Elements

- **M** Information Security Analyzer
- **M** Privacy control forms
- **M** Aggregated Patient Information

### Observation

Health plans will need to be sensitive to information security concerns, both perceived and real in the exchange of patient information with suppliers.

### Extension

Health plans are in a unique position, having detailed information on plan members which can be used to develop valuable capabilities with other players within the system. However, the information being handled is sensitive and might become an issue as more and more analysis is being performed on plan member data.

The right steps will need to be taken to insure that plan member data is secured against information theft. In addition, health plans should make it easy for plan members to change their privacy settings to provide them with peace of mind.
### Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>No unified view of health care products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mode</strong></td>
<td>Provisions for Suppliers</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Assembling</td>
</tr>
<tr>
<td><strong>Originator</strong></td>
<td>Sriram Thodla</td>
</tr>
</tbody>
</table>

### Sources
- Personal Observation
- MedWatch
  - [http://www.fda.gov/medwatch/What.htm](http://www.fda.gov/medwatch/What.htm)

### Associated Functions
- Assemble product competitive landscape

### Observation
There are numerous providers of health care products in the current health care system and no unified view of health care products. To reasonably evaluate all of them and provide reviews to plan members is a costly and time-consuming task.

### Extension
With the distribution of medical products spread over thousands of suppliers, health plans are faced with the challenge of assessing the capabilities and effectiveness of these products in a timely and cost-effective manner. The challenge arises because there is no central body within the health care system which acts as a clearinghouse for all products. The implications of this are that health plans have no single location to get information from or submit information regarding the effectiveness of products.

MedWatch, the FDA’s service for providing safety and adverse medical alerts on products focuses on reporting serious events that might require the product to be pulled from the marketplace. While this is extremely beneficial for critical issues, MedWatch makes no attempt to rate the products on their relative effectiveness.

### Design Strategies
- Work with suppliers
- Develop a central product review body

### Solution Elements
- M Class I, II & III equipment list
- S HP Supplier relationship
- S Equipment usage analyzer
- S Online information exchange portal

---

Version: 1  
Date: 14 October 2007  
Date of Original: 14 October 2007
### Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Rethinking—DesignThinking—Health Care: The Health Plan Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Provisions for Government</td>
</tr>
<tr>
<td>Activity</td>
<td>Assembling</td>
</tr>
<tr>
<td>Originator</td>
<td>Sriram Thodla</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
</tbody>
</table>

#### Sources
- Personal Observation

#### Associated Functions
- Assemble subscriber demographics
- Assemble relevant lifestyle consumptions and activities

#### Observation
Trying to build a subscriber health profile by understanding their lifestyle can be challenging because there is little information that health plans would have access to.

#### Extension
Health plans could significantly improve subscriber health by understanding their lifestyle but it is very challenging to build such a profile. An accurate picture of a person’s lifestyle would enable health plans to offer incentives to change unhealthy behavior, offer discounts on gym memberships and other value added services.

However, it is extremely hard to build an accurate picture of a subscriber through their claims information. Since the only physical contact with the subscriber happens through the provider, there is little or no insight into the subscriber themselves. In addition, subscribers may not want to reveal personal information that they feel might be used against them.

Finding a solution to this design factor would help Health Plans develop programs to enhance subscriber health while ensuring patient’s privacy.

#### Design Strategies
- Study regional trends
- Ask the subscriber
- Develop profile over multiple interactions

#### Solution Elements
- **S** Patient lifestyle survey form
- **M** Member demographic database
- **S** Consumption and activities report
- **M** Regional and neighborhood disease prevalence report

---

**Version:** 1  
**Date:** 14 October 2007  
**Date of Original:** 14 October 2007
Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Sources</th>
<th>Associated Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rethinking—DesignThinking—Health Care: The Health Plan Role</td>
<td>Personal Observation</td>
<td>52 Assemble subscriber demographics</td>
</tr>
</tbody>
</table>

Mode
- Provisions for Government

Activity
- Assembling

Originator
- Sriram Thodla

Contributors

<table>
<thead>
<tr>
<th>Observation</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic data is not up to date and hard to find.</td>
<td>Demographics data is currently available from the government but the information is updated every five years based on the national census. This results in out of date information which the health plans can’t rely on to create health plan solutions that are targeted at regional demographics.</td>
</tr>
<tr>
<td></td>
<td>Demographic data is also hard to find at the right level of detail. While large state wide demographics might exist, any further granular view of the people in a region or neighborhood is not available easily.</td>
</tr>
<tr>
<td></td>
<td>The ability to understand the accurate demographic disposition of a region would allow health plans to better assess risk, develop health products, foster community workshops etc.</td>
</tr>
</tbody>
</table>

Design Strategies
- Get more frequent updates
- Gather information yourself
- Ask the subscribers

Solution Elements
- Census Feed
- Regional and neighborhood disease prevalence report
- Subscriber demographic database
### Design Factor

<table>
<thead>
<tr>
<th>Design Factor</th>
<th>Health data is widely spread, hard to collect and disparate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
<td>Rethinking—Design Thinking—Health Care: The Health Plan Role</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>Provisions for Government</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Assembling</td>
</tr>
<tr>
<td><strong>Originator</strong></td>
<td>Sriram Thodla</td>
</tr>
<tr>
<td><strong>Contributors</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Sources
- Personal Observation

### Associated Functions
- 71 Identify and collect preventive health care practices

### Observation
Health plans have a hard time collecting and understanding the numerous amounts of health practice data available.

### Extension
Health plans need to identify and evaluate new health care practices to ensure that the providers they work with are using the best possible procedures. However, there are too many sources of information making it hard to evaluate which practices are beneficial.

Health plans should track the latest practices because providers are not as up to date as we’d like to believe. There are numerous advances happening both nationally and internationally and health plans should collect this information to make sure that their subscribers are getting the best care possible.

Health plans are increasingly hiring medical personnel who are able to evaluate whether new practices would be beneficial. In addition, alternative therapies could offer similar or better benefits in certain cases allowing health plans to reduce cost without sacrificing quality of care.

### Design Strategies
- Partner to gather the relevant information
- Gather information from subscriber
- Store information in an easy to use format

### Solution Elements
- Health partnership network
- Alternative health practice survey
- Open health knowledge base

---

Version: 1  Date: 14 October 2007  Date of Original: 14 October 2007
### Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Rethinking—DesignThinking—Health Care: The Health Plan Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Provisions for Suppliers</td>
</tr>
<tr>
<td>Activity</td>
<td>Assembling</td>
</tr>
<tr>
<td>Originator</td>
<td>Sriram Thodla</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
</tbody>
</table>

#### Observation

Collecting the vast amounts of health plan data is a challenge.

#### Extension

Health plans can use the vast amounts of health care data but collecting all this data poses a challenge in terms of cost, capacity and ability to analyze the data effectively and in time to make changes.

Data currently exists in numerous places with no standard methods of collecting this information. Product information is spread across thousands of suppliers, health care information is spread across equally numerous clinics and demographic data exists in numerous public and government databases.

Health plans need to effectively reduce costs and improve their quality of care by using the available data but doing so represents a huge challenge.

### Design Strategies

- Partner with other health plans
- Common knowledge sharing

### Solution Elements

- Online information exchange portal
- Health Plan partnerships
### Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Sources</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Associated Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisions for Providers</td>
<td>28 Assemble procedural costs across providers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembling</td>
<td>Its difficult for health plans to validate actual procedural costs of providers. This is a barrier to transparency. The lack of standardization creates leaps of disparity disallowing access to quality health care at reasonable prices.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Originator</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preethi Lakshminarayanan</td>
<td>Increasing people’s awareness of their health care spending goes hand-in-hand with getting hospitals, physicians and eventually health insurance companies to share more price information. The initiative has to be first taken by the providers by actively allowing pricing and care quality information to be made public.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contributors</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Design Strategies</th>
<th>Solution Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentivize Providers to publish detailed procedural cost</td>
<td>S V.Price</td>
</tr>
<tr>
<td>Create information dissemination channels</td>
<td>S QuickHealth Centers</td>
</tr>
</tbody>
</table>
### Difficult to access patient health information

<table>
<thead>
<tr>
<th>Project</th>
<th>Design Thinking Health Care—Health Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Provisions for employers</td>
</tr>
<tr>
<td>Activity</td>
<td>Facilitating</td>
</tr>
<tr>
<td>Originator</td>
<td>Preethi Lakshminarayanan</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
</tbody>
</table>

#### Observation

It is difficult for health plans to access protected health information. Access to health information would help plans innovate benefit structures with a view of providing better options to employees.

#### Extension

HIPAA prohibits health plans to create eligibility rules citing health status, medical history, disability etc. But any individual can share his/her protected health data (PHI) voluntarily.

Employers too are not privy to PHI's. The employees don't have enough decision making aids to make choices by predicting their health. If the cost versus benefits ratio has to swing up on benefits, then consumer based health plan has to be tailored to consumer health profiles and preferences.

Health plans would greatly benefit in being able to get aggregated PHI's of employees to offer a best suited list of coverage benefits according to employee health demographics. A degree of privacy can be ensured in this process by giving the user levels of disclosure as stated in HIPPA.

#### Design Strategies

- Determine PHI access
- Monitor PHI access
- Incentivize consumers for PHI access
- Educate on PHI and access procedure

#### Solution Elements

- Health Data Bank

#### Sources

- Personal Observation
- Team Deliberation

#### Associated Functions

- 63 Facilitate employer choice of health plan
### Design Factor

<table>
<thead>
<tr>
<th>Design Factor</th>
<th>Lack of comparable advice on procedure and cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
<td>Design Thinking Health Care—Health Plans</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>Provisions for providers</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Assembling</td>
</tr>
<tr>
<td><strong>Originator</strong></td>
<td>Preethi Lakshminarayanan</td>
</tr>
<tr>
<td><strong>Contributors</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Sources
- Personal Observation
- Team Deliberation

#### Associated Functions
- 64 Facilitate employee decisions regarding treatment

#### Design Strategies
- Create care decision aids for patients

#### Solution Elements
- M Health Data Bank

#### Observation
Comparable advice on procedure and cost is important to consumers choosing a provider. Currently the costs are not available, and the procedure and not compared or listed.

#### Extension
Many health plans are setting up decision aid tools for consumers. They are currently in form of web sites. But more such tools that reside with the patient (web site), that are available in provider hospitals/clinics (kiosks) or services that are open to patients under care (mobile services) can be developed.

Patient decision making tools that provide comparable guidance on type of procedures, quality of procedure and cost across providers will help patients choose the best and the reasonably priced provider. This would also help in increasing value based competition among providers.
### Design Factor

<table>
<thead>
<tr>
<th>Project</th>
<th>Difficult to get credible qualitative data on preventative care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Associated Functions: 80 Communicate effectiveness of preventative care</td>
</tr>
<tr>
<td>Government</td>
<td>Observations:</td>
</tr>
<tr>
<td>Activity</td>
<td>Team Deliberation</td>
</tr>
<tr>
<td>Communicating</td>
<td></td>
</tr>
</tbody>
</table>

**Originator**
Preethi Lakshminarayan

**Contributors**

<table>
<thead>
<tr>
<th>Observation</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive care efforts are disparate and its difficult to rate their effectiveness. Efforts are also largely distributed and implemented by various parties.</td>
<td>Responsibility of preventive care don’t rest with a single stakeholder. Patients are also responsible for taking preventive care seriously. Health plans are well placed to act as health awareness creators due to their access to consumer profiles. As initiators of health awareness initiatives health plans can group their consumers under different categories and distribute targeted information on preventive care.</td>
</tr>
<tr>
<td>With health plans acting as nodal units that initiate and manage preventive care activities, it’ll become easier to track effectiveness of initiatives. This would also lead to better communication of the results of such efforts and allow for improvement over time.</td>
<td></td>
</tr>
</tbody>
</table>

**Design Strategies**

- Group consumers based on health needs

**Solution Elements**

- Health Support Groups
## Activity Analysis

### Project
**Rethinking—DesignThinking—Health Care: The Health Plan Role**

### Mode
**Provisions for Government**

### Originator
Preethi Lakshminarayanan

### Contributors
- Oct. 2007. Kichu Hong
- Oct. 2007. Peter Rivera-Pierola
- Oct. 2007. Sriram Thodla

### Users
- Employers
- Data analysts
- Insurance agents
- Customer service representatives
- Patients/Employees
- Providers
- Health inspectors/educators

### System Components
- Reports
- Score cards
- Computers
- Data Analysis systems
- Telephones

### Environmental Components
- Plan Information database
- Internet
- Forums
- Analysis tools
- Printing and publishing tools

### System Functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F79</td>
<td>Communicate disease, allergy prevalence and environmental hazards</td>
</tr>
<tr>
<td>F80</td>
<td>Communicate effectiveness of preventative care</td>
</tr>
<tr>
<td>F81</td>
<td>Communicate range of prices for services and coverage</td>
</tr>
<tr>
<td>F82</td>
<td>Communicate health behavior recommendations for education</td>
</tr>
<tr>
<td>F83</td>
<td>Communicate patient recovery rates</td>
</tr>
<tr>
<td>F84</td>
<td>Communicate Medicare/Medicaid patients &amp; procedures administered</td>
</tr>
<tr>
<td>F85</td>
<td>Communicate health plan performance</td>
</tr>
<tr>
<td>F86</td>
<td>Publish state government scorecards</td>
</tr>
</tbody>
</table>

### Associated Design Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Plan data is representational</td>
<td></td>
</tr>
<tr>
<td>Time lag between allergy, diseases and environmental prevalence data getting fed back to health plan</td>
<td></td>
</tr>
<tr>
<td>Difficult to obtain and validate patient behavior data</td>
<td></td>
</tr>
<tr>
<td>Difficult to get credible qualitative data on preventative care</td>
<td></td>
</tr>
<tr>
<td>There is no single price list due to provider price variation</td>
<td></td>
</tr>
<tr>
<td>Too much information for government</td>
<td></td>
</tr>
<tr>
<td>Difficult to mandate and track follow up treatments</td>
<td></td>
</tr>
<tr>
<td>Obtaining credible quantitative data on recovery rates is difficult</td>
<td></td>
</tr>
<tr>
<td>No available metrics for recovery measurement</td>
<td></td>
</tr>
<tr>
<td>No comprehensive record of procedures administered</td>
<td></td>
</tr>
<tr>
<td>Self reported performance data cannot be validated</td>
<td></td>
</tr>
<tr>
<td>Undefined metrics for scorecards</td>
<td></td>
</tr>
</tbody>
</table>

### Scenario
Health Plans can provide beneficial information to Government on current health trends across the country. Communicating these findings will help government better track health status and needs on a macro level.
### Activity Analysis

#### Project
Rethinking—DesignThinking—Health Care: The Health Plan Role

#### Mode
Provisions for Suppliers

#### Originator
Kichu Hong

#### Contributors

### System Components

<table>
<thead>
<tr>
<th>Activity</th>
<th>System Functions</th>
<th>Associated Design Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Communicate product competitive landscape</td>
<td>Product landscape changes fast</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Product performances can be affected by different factors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High tech products are produced by only a few suppliers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is no existing model for some high tech products for comparison</td>
</tr>
<tr>
<td>16</td>
<td>Publish health trends report</td>
<td>Trend analysis needs special skill</td>
</tr>
<tr>
<td>17</td>
<td>Publish patient market segments report</td>
<td>Data compiling is time consuming</td>
</tr>
<tr>
<td>18</td>
<td>Communicate Class II product efficiency</td>
<td>Difficult to source and collect regarding data</td>
</tr>
<tr>
<td>19</td>
<td>Communicate Class III product durability information</td>
<td>Long term study is required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some old data is missing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Difficult to sort out old data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data is not complete</td>
</tr>
<tr>
<td>20</td>
<td>Communicate drug side effects &amp; effectiveness (performance)</td>
<td>Drugs can perform differently on different users</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumers do not willingly provide feedback</td>
</tr>
</tbody>
</table>

### Environmental Components

- Database
- Information access

---

Health plans communicate and publish useful information for suppliers such as product competitive landscape, health trends report, patient market segments report, Class II product efficiency, Class III product durability, and drug performance on users by interpreting and evaluating data that health plans collect.
<table>
<thead>
<tr>
<th>Source Design Factor/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Healthy individuals can't predict the depth of coverage they will need</td>
</tr>
</tbody>
</table>

### Description

A questionnaire about financial and medical well being that helps to steer new enrollees toward Medical plans and options that would best suit their condition.

### Associated Function/s

- Facilitate employee choice of health plan

### Properties

- A questionnaire to determine an individual's fiscal strength
- An analysis of medical history
- An analysis of family medical history
- An analysis of current personal/family health needs such as medications, regular appointments
- A health risk calculator
- A financial risk calculator (similar to managed investments risk calculator)

### Features

- Analyzes health risks to occur within the given enrollment period
- Prompts employee/subscriber to consider all known medical expenses to be incurred within enrollment period
- Helps individuals to determine their comfort with financial risk
- Provides data to “Coverage Level Recommendation Generator”

### Contributors

Matthew Gardner
<table>
<thead>
<tr>
<th>Solution Element</th>
<th>Family Health Record Links</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
<td>Rethinking—DesignThinking—Health Care: The Health Plan Role</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>Provisions for Employers</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Facilitating</td>
</tr>
<tr>
<td><strong>Originator</strong></td>
<td>Matthew Gardner</td>
</tr>
</tbody>
</table>

**Description**

A reference to previous generations of family members’ health histories which would quickly distill and display relevant information for hereditary disease query.

**Properties**

- A link to biological relatives’ medical record
- A pattern detection algorithm
- A search engine that operates within family links
- A hereditary disease risk report generator

**Features**

- Preserves connections to biological family members’ records
- Displays family tree and highlights related information
- Searches symptom patterns
- Suggests likelihood of disease for patient in question

**Associated Function/s**

- 26 Assemble patient health history
- 37 Communicate patient health history
- 66 Facilitate employee choice of health plan

**Source Design Factor/s**

- 12 Healthy individuals can’t predict the depth of coverage they will need

**Source**

Personal Observation
### Means/Ends Analysis

**Rethinking—Design Thinking—Health Care: The Health Plan Role**

#### Functions - Means

<table>
<thead>
<tr>
<th>Means</th>
<th>Ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance information</td>
<td>2 Assemble drug performance information</td>
</tr>
<tr>
<td>Drug efficacy</td>
<td>8 Assess short term drug efficacy</td>
</tr>
<tr>
<td>Drug efficacy</td>
<td>9 Assess long term drug efficacy</td>
</tr>
<tr>
<td>Competitive landscape</td>
<td>15 Communicate product competitive landscape</td>
</tr>
<tr>
<td>Drug side effects &amp; effectiveness</td>
<td>20 Communicate drug side effects &amp; effectiveness</td>
</tr>
<tr>
<td>Performance data</td>
<td>40 Communicate drug performance data</td>
</tr>
<tr>
<td>Drug intake results</td>
<td>74 Correlate drug intake results</td>
</tr>
<tr>
<td>Prescription claims</td>
<td>1 Assemble drug prescription claims</td>
</tr>
<tr>
<td>Supplier info exchange cooperation</td>
<td>14 Assess supplier info exchange cooperation</td>
</tr>
<tr>
<td>Class II usage</td>
<td>23 Assemble drug performance data</td>
</tr>
<tr>
<td>Class III usage</td>
<td>4 Assemble Class II equipment usage</td>
</tr>
<tr>
<td>Product competitive landscape</td>
<td>5 Assemble Class III equipment usage</td>
</tr>
<tr>
<td>Class II product efficiency</td>
<td>12 Assess Class II product efficiency</td>
</tr>
<tr>
<td>Supplier info exchange cooperation</td>
<td>14 Assess supplier info exchange cooperation</td>
</tr>
<tr>
<td>Class II product efficiency</td>
<td>18 Communicate Class II product efficiency</td>
</tr>
<tr>
<td>Class III product outcomes</td>
<td>13 Assess Class III product outcomes</td>
</tr>
<tr>
<td>Class III product durability</td>
<td>19 Communicate Class III product durability</td>
</tr>
</tbody>
</table>

#### Ends - Means

<table>
<thead>
<tr>
<th>Means</th>
<th>Ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating drug performance report card</td>
<td>114 Creating drug performance report card</td>
</tr>
<tr>
<td>Understanding drug usage prevalence</td>
<td>115 Understanding drug usage prevalence</td>
</tr>
<tr>
<td>Assessing equipment competitiveness</td>
<td>116 Assessing equipment competitiveness</td>
</tr>
<tr>
<td>Tracking equipment performance</td>
<td>117 Tracking equipment performance</td>
</tr>
<tr>
<td>Drug quality evaluation</td>
<td>209 Drug quality evaluation</td>
</tr>
<tr>
<td>Equipment quality evaluation</td>
<td>210 Equipment quality evaluation</td>
</tr>
<tr>
<td>Supplier product evaluation</td>
<td>305 Supplier product evaluation</td>
</tr>
<tr>
<td>Functions</td>
<td>Means</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>21</td>
<td>Assemble patient health behavior profile</td>
</tr>
<tr>
<td>42</td>
<td>Communicate patient health behavior</td>
</tr>
<tr>
<td>68</td>
<td>Facilitate networking of employees for social support</td>
</tr>
<tr>
<td>71</td>
<td>Identify and collect preventive health care practices</td>
</tr>
<tr>
<td>72</td>
<td>Assemble results of preventive health care practices</td>
</tr>
<tr>
<td>77</td>
<td>Assemble relevant lifestyle consumptions and activities</td>
</tr>
<tr>
<td>45</td>
<td>Reconcile patient health benefits</td>
</tr>
<tr>
<td>48</td>
<td>Assemble employer specific health recommendations</td>
</tr>
<tr>
<td>50</td>
<td>Assemble risk reduction options</td>
</tr>
<tr>
<td>26</td>
<td>Assemble patient health history</td>
</tr>
<tr>
<td>37</td>
<td>Communicate patient health history</td>
</tr>
<tr>
<td>21</td>
<td>Assemble patient health behavior profile</td>
</tr>
<tr>
<td>54</td>
<td>Communicate employer-specific health benefits and values gained</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ends</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>127</td>
<td>Promoting Patient Health</td>
</tr>
<tr>
<td>128</td>
<td>Understanding Health Risk Reduction</td>
</tr>
<tr>
<td>129</td>
<td>Recording Patient Health History</td>
</tr>
<tr>
<td>130</td>
<td>Summarizing Health Benefits Gained</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ends</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>216</td>
<td>Health Promotion</td>
</tr>
<tr>
<td>217</td>
<td>Communication Of Health Value</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>309 Health Awareness Promotion</td>
</tr>
</tbody>
</table>
Ends/Means Synthesis

Rethinking—Design Thinking—Health Care: The Health Plan Role

Ends/Means System Element

### Supplier Product Evaluation

- **305**

#### End

- **Supplier Product Evaluation**

#### Means

- Determine products to be measured
- Establish proper metrics for evaluation
- Identify evaluators
- Determine frequency of evaluation
- Collect reviews
- Distribute results to appropriate players
- Maintain authenticity of reviews

#### End for What Means?

- Identify products where data is accessible and relevant
- Collect information on new products
- Collect information on critical products
- Ask relevant experts
- Conduct qualitative patient research
- Ask suppliers
- Test across product lifespan
- Test at random intervals
- Create peer web review system
- Conduct consumer reviews
- Publish supplier reports
- Publish product reports
- Assign quality moderators

### Product Relevancy Tracking

- Product Scouts
- Expert Network
- Patient Workshops
- Lifecycle Reviews
- Evaluative Crowdsourcing
- Medical Consumer Reports
- Medical Trade Journals
- Scorecard Rankings
- Online Review Forums
- Reviewer Rankings

---

End for What Means?
## Ends/Means Synthesis

### DesignThinking Health: Health Awareness Promotion

#### Cluster 309

<table>
<thead>
<tr>
<th>End</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>309</td>
<td>Health Awareness Promotion</td>
</tr>
</tbody>
</table>

- **End for What Means?**
  - Find and prioritize health awareness areas
  - Identify user segments
  - Plan promotion scale and objectives
  - Implement promotions
  - Evaluate promotions

<table>
<thead>
<tr>
<th>End</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Analyze regional/national patient health behaviour</td>
</tr>
<tr>
<td></td>
<td>Analyze regional/national disease trends</td>
</tr>
<tr>
<td></td>
<td>Collaborate with providers and health care givers</td>
</tr>
<tr>
<td></td>
<td>Map patients to awareness requirements</td>
</tr>
<tr>
<td></td>
<td>Group families/communities to awareness requirements</td>
</tr>
<tr>
<td></td>
<td>Create patient awareness goals</td>
</tr>
<tr>
<td></td>
<td>Establish targetted promotional activities and contextual timeline</td>
</tr>
<tr>
<td></td>
<td>Establish platforms for conducting promotional activities</td>
</tr>
<tr>
<td></td>
<td>Analyze patient behavior information over time</td>
</tr>
<tr>
<td></td>
<td>Analyze health trend info over time</td>
</tr>
<tr>
<td></td>
<td>Analyze individual patient information</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Means System Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness threshold indicator</td>
</tr>
<tr>
<td>Awareness area survey</td>
</tr>
<tr>
<td>Awareness cluster</td>
</tr>
<tr>
<td>Health Awareness Policy</td>
</tr>
<tr>
<td>Awareness Per Patient Program</td>
</tr>
<tr>
<td>Awareness Per Family Program</td>
</tr>
<tr>
<td>Awareness Per Community Program</td>
</tr>
<tr>
<td>Awareness Per Network Program</td>
</tr>
<tr>
<td>Awareness per County/State Program</td>
</tr>
<tr>
<td>Awareness and promotion team</td>
</tr>
<tr>
<td>IVA indicator (Improvement via awareness)</td>
</tr>
<tr>
<td>System Elements</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Features</strong></td>
</tr>
<tr>
<td>1. Assemble drug prescription claims</td>
</tr>
<tr>
<td>2. Assemble drug performance information (received from Providers)</td>
</tr>
<tr>
<td>4. Assemble Class II equipment usage (received from Providers)</td>
</tr>
<tr>
<td>5. Assemble Class III equipment usage (received from Providers)</td>
</tr>
<tr>
<td>6. Assemble product competitive landscape</td>
</tr>
<tr>
<td>9. Assess long term drug efficacy</td>
</tr>
<tr>
<td>12. Assess Class II product efficiency</td>
</tr>
<tr>
<td>13. Assess Class III product outcomes</td>
</tr>
<tr>
<td>14. Assess supplier info exchange cooperation</td>
</tr>
<tr>
<td>15. Communicate product competitive landscape</td>
</tr>
<tr>
<td>18. Communicate Class II product efficiency</td>
</tr>
<tr>
<td>19. Communicate Class III product durability information</td>
</tr>
<tr>
<td>20. Communicate drug side effects &amp; effectiveness (performance)</td>
</tr>
<tr>
<td>23. Assemble drug performance data</td>
</tr>
<tr>
<td>40. Communicate drug performance data</td>
</tr>
<tr>
<td>74. Correlate drug intake results</td>
</tr>
</tbody>
</table>

- **Strongly supports fulfillment of the Function**
- **Supports fulfillment of the Function**
<table>
<thead>
<tr>
<th>Features</th>
<th>Awareness threshold indicator</th>
<th>Awareness area survey</th>
<th>Awareness Cluster</th>
<th>Awareness &amp; promotion dept.</th>
<th>IVA Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Assemble patient health behavior profile</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>26</td>
<td>Assemble patient health history</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>37</td>
<td>Communicate patient health history</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>42</td>
<td>Communicate patient health behavior</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>45</td>
<td>Reconcile patient health benefits</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>48</td>
<td>Assemble employer-specific health recommendations</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>50</td>
<td>Assemble risk reduction options</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>54</td>
<td>Communicate employer-specific health benefits and values gained</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>68</td>
<td>Facilitate networking of employees for social support</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>71</td>
<td>Identify and collect preventive health care practices</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>72</td>
<td>Assemble results of preventive health care practices</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Strongly supports fulfillment of the Function]</td>
</tr>
<tr>
<td>77</td>
<td>Assemble relevant lifestyle consumptions and activities</td>
<td>![Strongly supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
<td>![Supports fulfillment of the Function]</td>
</tr>
</tbody>
</table>
**System Element Pairings:**

<table>
<thead>
<tr>
<th>System Elements</th>
<th>5-7</th>
<th>1-4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project:</strong> Rethinking Health Care - Health Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>System Element Pairings:</strong></td>
<td>with</td>
<td></td>
</tr>
<tr>
<td><strong>System Elements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contextual Recommendation Engine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provider Performance Scorecard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provider Performance Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employer Health Adviser</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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 property/ies would make System Element X work with System Element Y?

<table>
<thead>
<tr>
<th>System Elements</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Health Stats App (PHSA)</td>
<td>MedForum</td>
<td>InfoGate</td>
<td></td>
</tr>
</tbody>
</table>

**Score**

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

**Example:** Forms for 14 System Elements

- Use 3 x 3 cells above the main diagonal
- To avoid duplication, use shaded cells only when the form is for comparisons where row numbers are greater than or equal to column numbers (e.g., 4x4 for 5-8 vs 1-4 or 1-4 vs 1-4; 3x3 for 2-4 vs 6-8)

**MedForum** can collect information regarding employer/employee satisfaction with the plan, specific problems or opportunities and use this information to advise plan analysts on areas to focus and products to develop.

**InfoGate** enables health plans to capture necessary information to generate provider performance reports and to properly communicate them to receivers.

**PHSA** can be a valuable tool for the Employer Health Adviser who can provide this service to employees as part of their health education program.

**Employer Health Adviser** can use InfoGate to capture workplace data and to deliver relevant recommendations and information to employees through My Health Manager of the employer side.
**Project:** Rethinking Health Care - Health Plan

**System Element Pairings:**

<table>
<thead>
<tr>
<th>System Elements</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Information Management System (PIMS)</td>
<td>8</td>
</tr>
<tr>
<td>Plan-to-Go</td>
<td>9</td>
</tr>
<tr>
<td>Community Health Program</td>
<td>10</td>
</tr>
</tbody>
</table>

**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 property/ies would make System Element X work with System Element Y?

**Contextual Recommendation Engine**

PIMS stores and communicates timely appropriate and relevant recommendations made by Contextual Recommendation Engine to plan members who subscribe to PIMS.

**Provider Performance Scorecard**

The extent to which providers promote and cooperate in plan portability could be a point of evaluation.

**Provider Performance Report**

PIMS stores and communicates personalized Provider Performance Report to plan members who subscribe to PIMS.

**Employer Health Adviser**

When requested from employers, Employer Health Adviser connects PIMS to My Health Manager of the employer side. Employees can choose to directly subscribe to PIMS.

**Plan-to-Go**

Plan-to-Go is a value-adding feature of health plans, and Employer Health Adviser can inform this to employers/employees to promote health plans and provide necessary information and suggestions.

**Community Health Program**

Community Health Program supports existing work support groups within the firms. The Employer Health Advisor serves as a liaison/moderator for intrafirm groups.

**Cells**

To avoid duplication, use shaded cells only when the form is for comparisons where row numbers are greater than or equal to column numbers (e.g., 4x4 for 5-8 vs 1-4 or 1-4 vs 1-4; 3x3 for 2-4 vs 6-8).
## Contextual Recommendation Engine

<table>
<thead>
<tr>
<th>Originator</th>
<th>Peter Rivera-Pierola</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contributors</strong></td>
<td></td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Matthew Gardner</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Kichu Hong</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Preethi Lakshminarayan</td>
</tr>
<tr>
<td>Nov. 2007.</td>
<td>Sriram Thodla</td>
</tr>
<tr>
<td><strong>SuperSet Element(s)</strong></td>
<td>Evaluation</td>
</tr>
<tr>
<td></td>
<td>Education</td>
</tr>
<tr>
<td><strong>Related Elements</strong></td>
<td>InfoGate</td>
</tr>
<tr>
<td></td>
<td>Personal Health Stats App</td>
</tr>
<tr>
<td></td>
<td>PIMS</td>
</tr>
<tr>
<td></td>
<td>Plan-to-Go</td>
</tr>
<tr>
<td></td>
<td>Community Health Program</td>
</tr>
<tr>
<td></td>
<td>Employer Health Adviser</td>
</tr>
<tr>
<td><strong>SubSet Element(s)</strong></td>
<td>Product Relevancy Tracking</td>
</tr>
<tr>
<td></td>
<td>Aggregate Reviewer Weighting</td>
</tr>
<tr>
<td></td>
<td>Cost Comparison Report</td>
</tr>
<tr>
<td></td>
<td>Consumer Workshops</td>
</tr>
<tr>
<td></td>
<td>Online Review Forums</td>
</tr>
</tbody>
</table>

### Description

A timely decision-making aid that distributes health care recommendations to patients at appropriate times throughout the patient care cycle. The recommendations are sourced from aggregating and analyzing government health trends, provider advice, supplier product information, 3rd party aggregated reviews, and plan member feedback.

### Properties — what it is

- An analysis and distribution engine that takes information from PIMS and distributes it contextually
- Comparative health care product ranks and evaluations from suppliers, providers, and government
- Aggregated review and product review information database (accomplished between InfoGate and third parties)
- Expert evaluations and consumer reviews
- Features Aggregate Reviewer Weighting to assign appropriate rank and value to evaluators
- Feedback workshops and forums (for gathering plan member opinions)

### Features — what it does

- Collects third party product/service performance evaluations
- Works with InfoGate/MedMap to form appropriate delivery channels
- Contextually distributes recommendations throughout care cycle
- Empowers consumers with transparent, accessible, and relevant information
- Expedites the research process for customers in need of advice and suggestions
- Informs suppliers of peer offerings
- Encourages healthy competition due to publicized comparisons
Although increased information access can empower customers, many will find the sheer number of newfound possibilities baffling, even overwhelming. To facilitate this decision-making process, Health Plans could leverage its data-collection capabilities to aggregate and distribute relevant information to its customers. Rather than simply suggest a comprehensive list of sources for research, targeted product recommendations could be made according to current customer health status and associated health needs. Much like Amazon.com’s 'Recommended for You' system, Health Plans could automatically and unobtrusively suggest appropriate health care recommendations based on real-time updates to patient electronic medical records (EMR) and personal health records (PHR) databases. For example, if a patient was recently diagnosed with hearing loss, InfoGate would communicate that to the aggregation system, which would then suggest a range of reviewed and ranked hearing aids covered by their policy. This minimizes the research efforts of the patient, while still encouraging them to make responsible health care decisions.

Evaluating health products and services can help increase transparency within the industry, thus encouraging healthy competition amongst all players in pursuit of maximum customer acquisition. Publishing this information and offering decision-making tools give more power to consumers and thereby elevates the importance of proper consideration. The end result empowers consumers to take responsibility for their own health, while stakeholders compete to remain desirable.

Medical products can be reviewed with a comparable degree of frequency and depth as common consumer products (such as electronics, housewares, and automobiles). Rather than having only a select few evaluators making all the decisions, the health care industry can leverage newfound connectivity offered through online social networking and crowdsourcing. By summoning the expansive efforts of the multitude, evaluations can eliminate biases and provide more efficient results in faster times (see Amapedia: a wiki dedicated to collaborative composition of a knowledge base of product reviews). Consumer Workshops can also be conducted by Health Advisers to gain more elusive, qualitative points of comparison. To maintain a distinct hierarchy between novice and expert evaluators, Aggregate Reviewer Weighting could be employed to rank the experience, prevalence, and overall value of each reviewer.

Health Plans can parse their claims data to try and determine the most relevant medical equipment, drugs, and services, however a larger data set can be achieved by leveraging the many third parties already conducting product evaluations. Efforts like the Health Care Product Evaluation Center (HCPEC) and Consumer Reports: MedicalGuide.org have established their own evaluation standards and offer authoritative, collaborative, and objective product analysis, followed by complete efficacy reporting and recommendations. Health Plans could form partnerships with such organizations, aggregate the results, and distill the most relevant portions to its membership.

Popularity models and case-based reasoning (CBR) could be used to determine products best suited for contextual recommendations. Another method involves examining which and when products are critical throughout the patient care cycle (Care Cycle Reviews). Once key products and categories have been identified, they could be rated across the entire product life cycle from manufacturing to disposal (Product Cycle Reviews). As reviews are compiled, leaders and benchmarks are established and ranked, providing clear results for consumers and suppliers alike. Reports can be published online or distributed through customer-preferred channels, ensuring proper and maximum exposure.

<table>
<thead>
<tr>
<th>System Element</th>
<th>Fulfilled Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Assemble drug prescription claims</td>
</tr>
<tr>
<td>2</td>
<td>Assemble drug performance information (received from Providers)</td>
</tr>
<tr>
<td>4,5,18</td>
<td>Assemble/Communicate Class II/III equipment usage (received from Providers)</td>
</tr>
<tr>
<td>6,15</td>
<td>Assemble/Communicate product competitive landscape</td>
</tr>
<tr>
<td>8,9</td>
<td>Assess short/long term drug efficacy</td>
</tr>
<tr>
<td>12</td>
<td>Assess Class II product efficiency</td>
</tr>
<tr>
<td>14</td>
<td>Assess supplier info exchange cooperation</td>
</tr>
<tr>
<td>20</td>
<td>Communicate drug side effects &amp; effectiveness</td>
</tr>
<tr>
<td>40</td>
<td>Communicate drug performance data</td>
</tr>
<tr>
<td>74</td>
<td>Correlate drug intake results</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Associated Design Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>8</td>
</tr>
</tbody>
</table>
A patient schedules an appointment with his doctor to ask him about his recent hearing degradation. The doctor determines that the patient's diabetes has gotten out of control and attributes the hearing loss to the disease. The doctor prescribes him a hearing aid and sends him on his way with information and options.

Once the prescription has been entered into the patient’s personal health record (PHR), the Health Plans’ Contextual Recommendation Engine sees the information and begins collecting and ranking hearing aids for the patient. It pulls data from both stakeholders and third parties to achieve a balanced set of aggregations. The information is compiled and analyzed, then top recommendations are made and delivered immediately to the patient’s PHR. These recommendations can then be accessed anywhere with a secure internet connection.

By automatically generating helpful recommendations, Health Plans save patients’ time and effort, as well as promote just enough patient responsibility. The engine would work throughout the patient care cycle, giving contextual, relevant advice directly to the patient’s preferred communication channels.

Recommendations would begin with Promotion and Prevention, for example, suggesting exercise and meal regimens. The Diagnosis phase would offer devices to monitor your health for instance. Much like in our scenario, the Treatment phase would suggest various products and service to cope with specific ailments. Finally, the Management and Rehabilitation phase would connect the patient to support networks and sessions to maintain health and wellness. The cycle is continuous, as are the recommendations provided.
Community Health Program identifies risk pools within plan members and helps them connect with support groups and information networks that promote preventative care.

**Properties — what it is**

- A tool to group plan members based on risk pools
- Information dissemination channel for health improvement
- Network of external health support groups based on health conditions, communities, neighborhoods and organizations
- Outreach program for various community based health initiatives
- Feedback and open communication channel between plan members and health plan

**Features — what it does**

- Identifies risk pools within plan members
- Partners with external health support groups
- Directs members of risk pools to relevant support groups
- Identifies and encourages community run health programs
- Delivers information for health improvement to plan members in risk pools
- Organizes forums for meaningful interface between plan members and health plan
The Community Health Program is a multi-faceted initiative. While helping health plans reduce their risk pool over time, the program also creates awareness for health improvement. The Community Health Program addresses the need for individuals within the health care system to find support groups that can help them during their times of need. There are three groups that the community health program will help identify that correspond with the significant social nodes of interaction that people have today. First, a work support group is identified by the community health program. This program initially associates an individual in a company with other employees who might share similar health interests. The program would offer incentives such as reduced premiums to promote individuals to participate within this group.

The second major social groups are neighborhood groups. The program identifies social support groups that are regionally clustered around an individual and helps match the individual to specific groups that they might benefit from. There are lots of existing groups that already exist and the program can provide value by identifying those that are relevant to the individual. Resources to create new groups within plan members will also be facilitated. Incentives could reduce premiums or prices of health products to encourage engagement with these groups.

Finally, the above modes of interaction are supplemented by a robust online support group for the tech savvy members. The program promotes outreach activities like community owned resource centers where health devices like the daily stats monitors can be shared by plan members when required. The Health Plan communities also serve as an open feedback and conversation channel on drugs, provider and health plan performance.

The value for health plans to pursue this program would be manifold. First, providing the ability for individuals to participate with health social networks would be a competitive advantage. Second, by encouraging individuals to join groups, there is a greater likelihood for individuals to adopt health practices. Ultimately, these would help encourage wellness and prevention of diseases rather than the current emphasis on treatment of diseases.
David is a pre-diabetic, over-weight 35-year-old man in a highly stressful job. Since he spends most his time at work, he prefers to form support groups within his work environment. The health plans, Employee Health Adviser visits organizations and does a work-place inspection. The adviser then studies the risk pools within the workplace and identifies 1 diabetic and 2 pre-diabetic employees with a possible genetic predisposition to diabetes.

The workplace inspection also leads to changes in cafeteria food. David and the others in his risk pool are notified of their presence in the pool through their preferred communication channel—e-mail. The diabetic plan member in the group is encouraged and incentivized to speak with the other members in his group and share his experiences, moderated by the adviser if the group is sufficiently large.

David attends his first diabetic meeting and finds himself comfortable asking questions to his coworkers. He learns his pre-diabetic condition is treatable. The health plan emails David and encourages him that he still has control over whether or not his health situation worsens and recommends a diet and moderate physical exercise. The plan also directs him to biking, jogging and swimming clubs within his neighbourhood through the web forum. David logs into the forum and reads more about the clubs and their activities.

He decides to begin his own club with the other diabetics in his office and they decide to play football every weekend. David moderates the group and regularly updates the groups page in the web forum. He gets relevant information published onto it from the plan. The employee health adviser monitors the groups progress and keeps in touch with them.

David sometimes borrows a health stats monitor from the community resource center and helps the plan track his health in a better manner. He opts in to disclose his personal health stats application information with other plan members. He is able to track his progress with those of others in the same health condition. This motivates David to maintain his weight and keep an eye on his diet.