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Rethinking – Design Thinking – Health Care

The Provider Role

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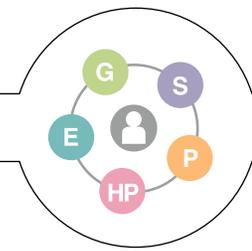
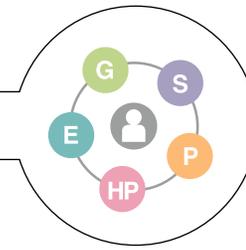


Table of Contents

Preface	i
Introduction	1
System Elements	5
Consumer Support	
Retail Health Outlet.....	5
Personal Health Advisor.....	7
[un]Structured Conversations.....	9
Clinical Pathway Map.....	11
Advanced Patient Education.....	13
Web CheckUp.....	15
Community Health Fairs.....	17
Empower Practitioners	
Satisfaction Collection Ratings.....	19
Patient Comprehension Test.....	21
Fair and Reliable Medical Justice Act.....	23
Value Transparency	
Condition Treatment Price Estimate.....	25
Condition Treatment Bill.....	27
Consumer-Generated Price List.....	29
Provider-Generated Price List.....	31
Comprehensive Performance Evaluations.....	33
MyChoice Calculator.....	37
Bid for Health.....	39
Patient Accountability	
Patient Compliance Agreement.....	41
Patient Responsibility Rewards.....	43
Conclusion	45



Preface

The Problem

Health Care is a major priority for Americans. For decades, it has been a matter of national concern; it now demands attention. As health care costs have climbed, concerns about financial failure have joined concerns about quality and access. In 2004, health care nationally accounted for 15.2% of the GDP, far in excess of amounts spent by any other developed country. For this, the life expectancy of Americans born in 2004 was 78 years. In 2007, life expectancy in the U.S. actually declined by .3%, placing the country 44th among industrialized nations. The mediocre level of quality we have purchased we have paid for with far more of our treasure than that spent by any other nation.

The cost of health care in this country must be brought down. Now nearly 2 trillion dollars annually and climbing, health care costs threaten to destabilize the national economy. But we are in no position to allow health care quality to decline; we already trail nearly all of our peers. Health care quality must improve as costs go down. The major health care sectors must find ways to provide services where quality of medical care is the competitive issue, and results are measured at the medical condition level in terms of patient outcome per unit of cost.

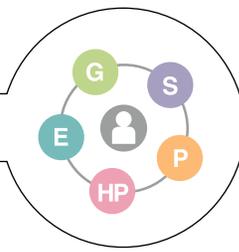
Harvard business strategist Michael Porter and colleague Elizabeth Teisberg have analyzed the competitive health care environment from the standpoints of the five major sectors involved: providers, payers/health-plans, suppliers,

employers and the government. Their remarkable conclusions are set forth in a recent book: “Redefining Health Care. Creating Value-Based Competition on Results”. Building on their strategic recommendations, the project described in this report examines how policy proposals might be implemented in the Providers sector.

Design planning and policy planning join effectively in policy design synthesis at the point where policy requires means of implementation. This project proposes design concepts in a system context to implement strategy for Providers as part of a larger construct uniting all five sectors of the health care community.

The Course

The design concepts are results from a project-based course at IIT’s Institute of Design. The semester-long Systems and Systematic Design course is a workshop in which teams of graduate students, deliberately of mixed international origins and different academic backgrounds, apply the computer-supported Structured Planning process to complex design planning problems. The goal for each project is to develop information thoroughly, propose innovative solutions that take maximum advantage of the information, and integrate those ideas into system concepts that can both be evaluated in their own right and (in a real situation) be the



comprehensive project specifications for a follow-on detailed development project.

Course Issues

Complexity. What is the nature of “systems” concepts where policy, products, processes, services and communications are organized to act together to achieve multiple goals? What can be done to assure that a system concept is as complete as possible, covering many functions and attaining a high degree of “wholeness” and organic reliability?

Design planning methods. What is Structured Planning and how can its tool-kit of methods be used to collect, structure and synthesize information in projects of greater complexity than can be comfortably dealt with intuitively? How can such methods be used by a team to extend the effectiveness of all?

Teamwork. How do individuals with different cultural origins and different academic backgrounds work together successfully on teams? What roles are there to be played and what difficulties must be overcome?

The Project Team

Twenty two graduate students from the U.S., Germany, South Korea, China, Singapore and India were assigned to five teams for study of the problems of the five health care sectors. Background experience for team members included degrees in automotive design, history, interior design, industrial design, electrical engineering, control and information technology, computer science, communication design, chemical engineering, environmental sciences & policy, media systems design, graphic design, English, marketing, international business and biotechnology.

Team members for this project team, studying health care services from the Providers’ side, are:

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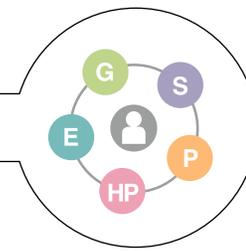
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The Planning Process: Structured Planning

Structured Planning, the systematic planning process taught, is a process for finding, structuring, using and communicating the information necessary for planning. It is a front-end process for developing concepts thoroughly and cohesively.

A number of projects have been undertaken with it and used to further its development. Among over 100 of these, an early published project for Chicago's transit authority (CTA) was Getting Around: Making the City Accessible to Its Residents (1971). In 1983, the House of the

Future project won the Grand Prize in the Japan Design Foundation's First International Design Competition. In 1985, the design of a habitation module for Space Station was undertaken for NASA. In 1987, the Aquitecture project won the Grand Prize again in the Japan Design Foundation's Third International Design Competition. In 1991, Project Phoenix on global warming was honored as Environmental Category Grand Winner in Popular Science magazine's "100 Greatest Achievements in Science and Technology" for the year. In 1993, two award winning projects, NanoPlastics and Aeritecture, were widely publicized in Europe and Japan; in 1995, the National Parks project developed plans for the future of the U.S. National Park Service. In 2001, Access to Justice, a project sponsored by the National Center for State Courts, was implemented for use in state courts across the United States, and in 2005, four projects on Home, Play,

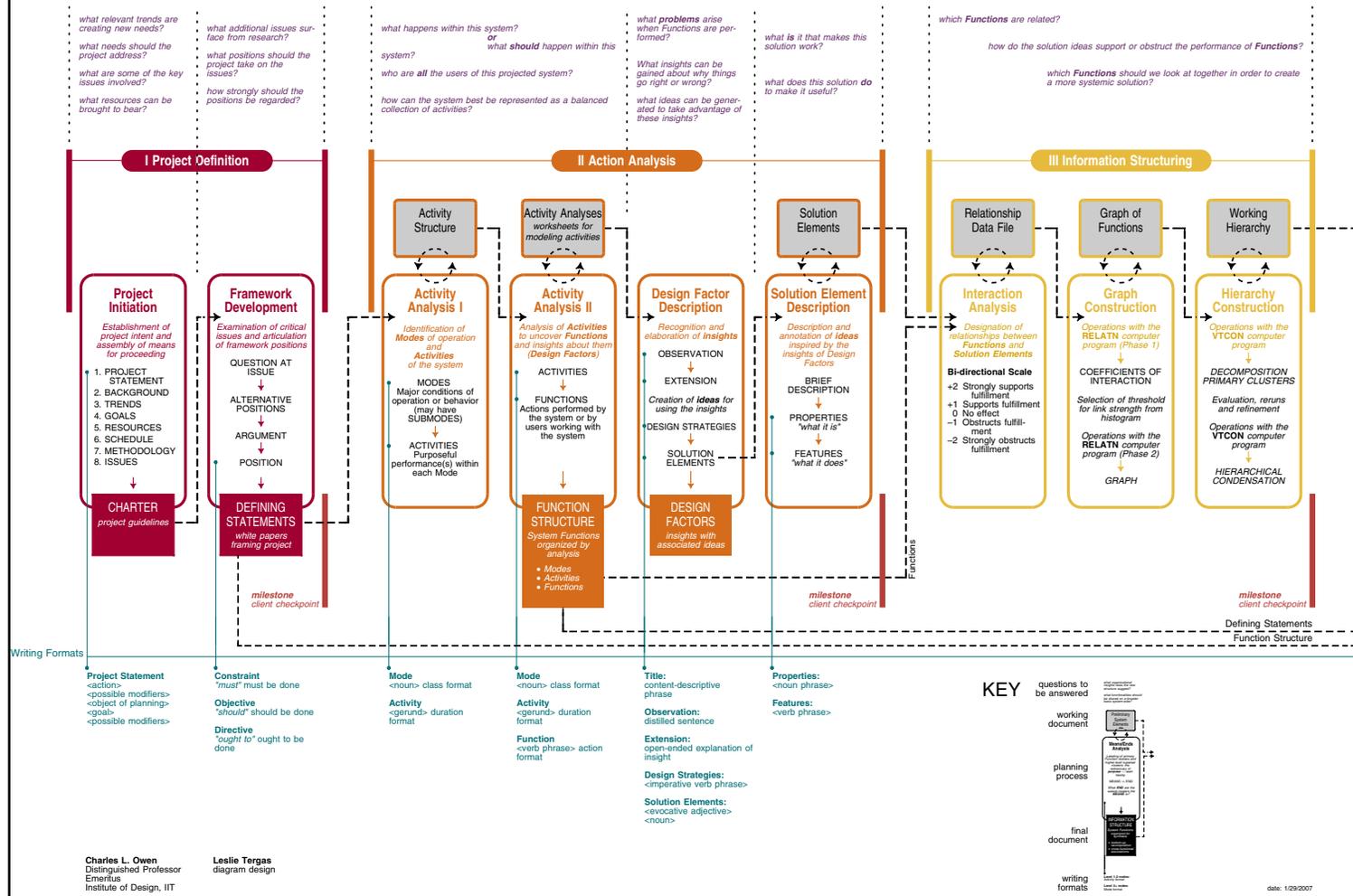
Work and Health were finalists in four of the five competition categories for Denmark's INDEX Awards, the world's richest design prizes. As the process has evolved, it has become an increasingly useful planning tool for business, institutions and government.

A diagram of the process, shown on the next page in two figures, outlines the activities that make up Structured Planning and the working documents and final products that are produced along the way. The following general description follows the diagram. While products of the process are discussed here in the abstract, it is possible to see specific examples produced for this project in the appendices that accompany the report.



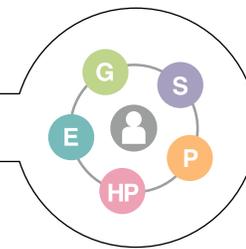
The Structured Planning Process (Phases I - III)

Structured Planning is a front-end, concept development process for finding, and communicating the information necessary for advanced planning



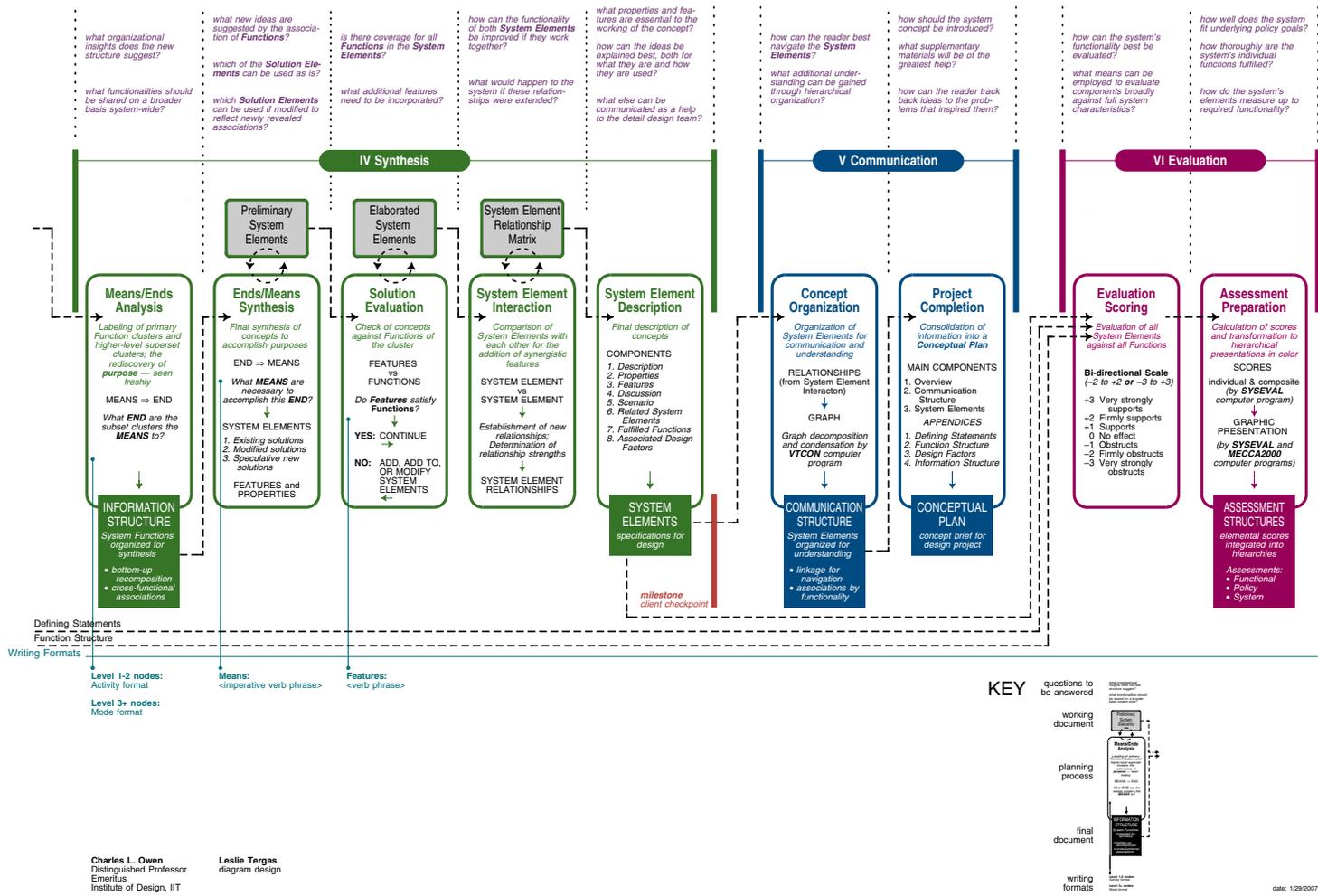
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diagram design



The Structured Planning Process (Phases IV - VI)

Structured Planning is a front-end, concept development process for finding, and communicating the information necessary for advanced planning





I Project Definition

The Structured Planning process begins with Project Initiation and the production of a Charter. This is a “brief” that serves as an initial communication vehicle between client and planners. It contains background, context, basic goals, a project statement that cuts to the heart of the planning task, resources to be used, a schedule and an initial set of issues to be investigated.

Defining Statements are mini “white papers” produced in the Framework Development portion of Project Definition. They focus the project within the direction of the Charter, concentrating on the issues and arguing specific directions that the project should follow with regard to them. Together with the Charter, they define the project.

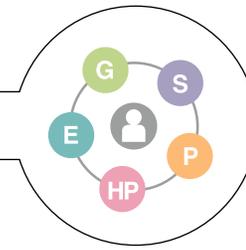
II Action Analysis

Any system can be viewed as a complex entity working with its users in different ways appropriate to its modes of operation. To plan effectively, a planning team must recognize these Modes, identify Activities that occur within them, and isolate the Functions that the users and system perform or are intended to perform within each Activity. The result of the Activity Analyses is a Function Structure.

Half of the purpose of Action Analysis is the enumeration of Functions. The other half is the development of information about these Functions that reveals insight about what happens as they are performed. During Action Analysis, insights are sought about why things go wrong in performing some Functions, and how other Functions manage to be performed well. These insights are uncovered in the Design Factor Description procedure and developed in documents that become part of a qualitative knowledge base. Activity Analyses record information at the Activity level; Design Factors document insights and ideas associated with Functions.

To capture as fully as possible the ideas suggested on Design Factor documents, solution ideas are written up in the Solution Element Description portion of Action Analysis. This is done on simple one-page forms designed to capture enough detail about ideas to give them substance when they are needed later. They have three important sections: “Description” -- a short explanation, “Properties” -- what the idea is, and Features -- what it does.

The product of Action Analysis is three sets of critical information: a set of Functions (the Function Structure), a set of insights (Design Factors) and a set of preliminary ideas (Solution Elements).



III Information Structuring

Paradoxically, as useful as the Function Structure is for establishing coverage, it is not the best form of organization for developing concepts. Reorganizing information for use in concept development is the job of two computer programs, RELATN and VTCON.

The controlling factor for whether two Functions are associated from the planning standpoint is not whether they are categorically “related” in some manner, but whether a significant number of their potential solutions are of concern to both. Which Solution Elements are of concern to each Function is established in an Interaction Analysis procedure. The RELATN program uses this information in a Graph Construction process to establish links between Functions.

Another program, VTCON, completes the information structuring process. The graph of Functions and links established by RELATN is not easily arranged for visual comprehension. In the Hierarchy Construction activity, VTCON finds clusters of highly interlinked Functions and organizes them into a semi-lattice hierarchy, a visually understandable, very general form of hierarchy most appropriate for planning. The hierarchy is called an Information Structure.

IV Synthesis

In its form from the VTCON program, the Information Structure is simply a hierarchical organization. Nodal points above the Function level do not have names. The task of Means/Ends Analysis is to create labels for all nodes in the hierarchy. Moving bottom-up from the known Functions in the bottom level clusters, the question is asked, “To what end are these Functions means?” The answering purpose, as a label, in turn is grouped with its siblings and viewed as means to a higher level end. The process continues to a completely labeled Information Structure.

The process is then reversed as a top-down, structured brainstorming procedure: Ends/Means Synthesis. In this process, the planning team asks of high level nodes, “what means do we need to meet this end?” As means are established, they are treated in turn as new ends for which means must be found, until the means become concrete enough to be described as final elements of the system (System Elements). Solution Elements originally conceived for the Functions involved are constantly reviewed as possible end products. Original ideas are modified or combined in the light of the means that evolve, and new ideas are added to fill unmet needs revealed by the Information Structure.

System Element Interaction compares System Element with System Element in a search for additional synergies that can contribute to systemic qualities. More than simply recognizing relationships, the planning team proactively



seeks out ways for System Elements to work together -- to the extent of modifying one, the other, or both. Changes and additions are incorporated in the properties and features of the individual System Elements.

The last task, System Element Description, completes the write-up of System Elements as specifications, including a succinct description, all relevant -- now essential -- properties and features, and extensive Discussion and Scenario sections that contain detailed expositions of the ideas in both conceptual and operational terms.

V Communication

Because the result of the Structured Planning process is a complex system, usually with a number of System Elements, a Communication Structure is frequently included as an aid to understanding. This is created during Concept Organization by the VTCON program from an assessment of how important the System Elements are to each other's operation. Using this structure, the reader can understand the system more easily and navigate its concepts with efficiency.

The product of the Structured Planning process, assembled in the Project Completion section, is a Conceptual Plan, made up of an Overview that provides background and introduces the system, the System Elements that describe

the ideas and their relationships, and Appendices that contain all relevant support information, including the Defining Statements, Design Factors, Function Structure and Information Structure.

VI Evaluation

Structured Planning incorporates evaluation among the steps of the process, most notably during Synthesis. It also offers an optional full-system evaluation technique that can be employed to evaluate final results against policy-level and/or function-level criteria. Used for this, it provides merit values hierarchically for the system, its component parts and individual system elements. It can also create similar hierarchical evaluations for the assessment of functional performance and policy performance. Used to compare systems, it can provide system, functional and policy assessments for multiple competitive candidates measured against common function and system structure frameworks.

Introduction

Michael Porter, renowned strategist and author of *Redefining Health Care*, espouses the policy themes: positive sum competition, value transparency, access to price/quality information, and aligned incentives in order to address the health care crisis.

Furthermore, George Halvorson, CEO of Kaiser Permanente and noted health system reform expert has said “Rhetoric will not make health care reform and a new market model happen. Wishful thinking will not make it happen. We need buyers to demand this kind of reform and then buy it. *Market forces need to be used with cash attached in order to have any real-world impact on the actual delivery of care.*”

In order to attain these optimal policy level scenarios that Porter and Halvorson advocate, health care providers, who play an important role in providing health to their communities, must adopt certain imperatives and focus on implementing solutions in three key areas: consumer support, empower practitioners, and value transparency.

Consumer Support

Conventional wisdom alienates normal people who then receive the “patient” moniker when they encounter a catastrophic health event. Following a trend of consumer driven health care embraced by Regina Herzlinger, noted health care thought leader at Harvard, providers are beginning to see the need to recognize patients as consumers of health care. Thus, “consumer support” involves providing

people with the right information at the right time they need to make health decisions.

In order to accelerate the paradigm shift where “patients” are viewed as “consumers,” solutions that are congruous with typical consumer behaviors are necessary. Consumers make decisions everyday to buy products and services with a perceived quality at an associated price. In the health care industry, limited access to price and quality for the consumer (and sometimes the disconnected payer) causes confusion, and misaligned perverse economic incentives for consumers. For example, consumers who are not wholly responsible for their health expenditure associate higher prices for treatment with better quality care. After all, a pair of \$100 headphones is more likely of higher quality than a \$10 pair. Extending the analogy, in the current state, headphones are much easier to research than a health care procedure (directly on an e-Tailer’s site such as Amazon.com or a consumer contributed advocacy site such as Epinions/CNet.com). These models are in desperate need of change if costs are to decrease within the health care system.

The consumer support proposals put forth include a multitude of solutions that seek to educate the consumer through a variety of conversations while directly engaged with the health system.

The **Retail Health Outlet (RHO)** is a store -- a new type of provider that is noteworthy for its convenience. It enables consumers to initiate the conversation of health care in familiar locations and modalities. The RHO’s emphasis on

selling product and service packages fosters the notion of consumer empowerment and engagement with wellness and preventive maintenance early.

The conversation of health care continues in more conventional settings like the clinic, where the caregiver diagnoses and treats. The introduction of the electronic medical record, ePrescribing, and related technologies will undoubtedly assist in the pursuit for quality care through evidence based medicine. At the same time, however, systems of electronic documentation have a tendency to dehumanize health care. According to the American Medical association, the average patient visit between a general practitioner and a patient is currently 7.5 minutes. One proposal that tries to resolve this paradox through design is the **[un]Structured Conversation** that builds shared understanding among physician and consumer.

A shift to consumer directed health implies increased cost sharing which precipitates the need for a **Personal Health Advisor**, a new type of professional who is conversant in personal finance as well as health care matters.

Empower Practitioners

Caregivers are the stewards of better health and wellness in the community. While supporting consumers with the tools to make better decisions is essential, empowering health care practitioners by removing unwarranted malpractice

risk, and creating equitable systems of responsibilities is fundamentally necessary.

Pay for Performance is a step in the right direction in ensuring that procedures learned through best practice can be stored as evidence based medicine and adhered to regularly. However, P4P schemes are not yet potent and have yet to make a meaningful dent in the quality standards of most general practitioners. Pay for Performance is constrained to what can be objectively measured, not necessarily indicators that consumers can access, and have emphasized process over outcomes. Developing **Comprehensive Performance Evaluation** schemes of quality in health care is a crucial step in the right direction to help providers differentiate and operate in areas that are important to consumers. By utilizing a **myChoice Calculator** to establish a personal preference profile, consumers can identify the best providers for their unique needs.

Another way to empower practitioners is to require **Patient Comprehension Tests** in tandem with the **[un]Structured Conversation**. Caregivers can thus ascertain that their consumers fully comprehend their treatment plans.

Low hanging fruit proposals to reduce transaction costs and friction through adoption of electronic payment and claims processing is also fundamentally necessary to empower practitioners.

Value Transparency

Today, most providers have diverse reimbursement schemes, involving 3rd parties such as private health plans and the government (through Medicare and Medicaid). The reimbursement schemes, ranging from fee-for-service to fixed fee lead to obfuscated price models for treatment. Both consumers and payors are unaware of their prospective cost until treatment has occurred.

In attempting to reach value transparency (where Value is defined as Quality and Price), proposals were sought that dealt with the creation of a la carte Price Lists in which consumers could find the prices for common procedures. In attempting to approach a pre-bill estimate and simple unified post-treatment bill, the analogy sought was a car service shop. An appropriate interim solution while providers do not have a comprehensive price list, is a consumer generated price list.

Patient Accountability

Providers should take the lead in creating aligned objectives for practitioners and consumers of health care to promote healthy lifestyle choices, preventive medicine and chronic condition management.

A symmetrically weighted **Patient Compliance Agreement** that emphasizes the importance of patient responsibility for taking care of their own health is an exceedingly simple

way to create an aligned objective between the two parties. *At its most basic and without any incentives or enforcement attached, it is a useful tool for having an important conversation with patients about their role in and opportunity to manage their own health.*

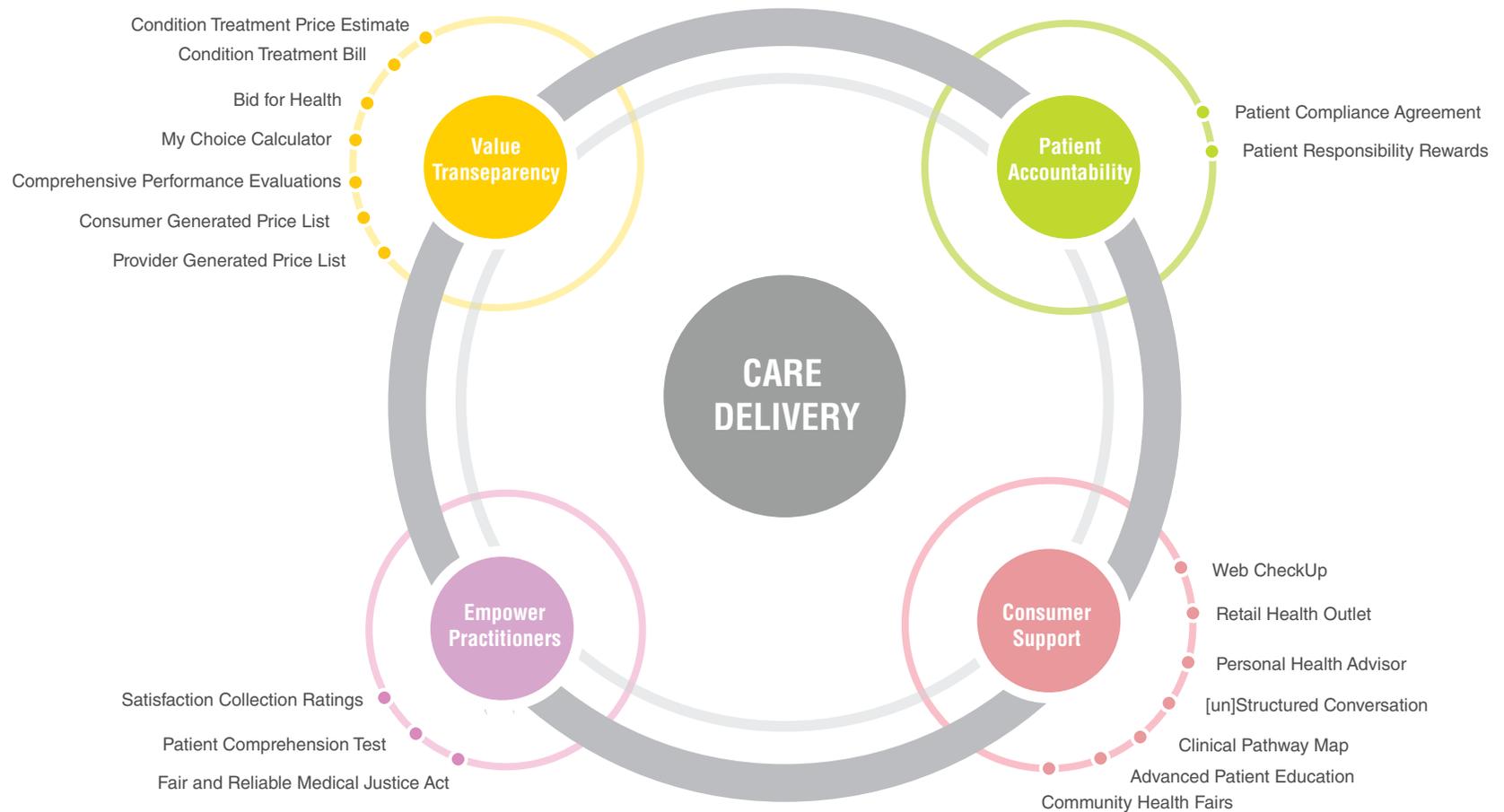
Assumptions made during Concept Development:

- Broader EMR adoption by hospital organizations (government mandates and subsidies to enable this to happen). This may include an established interoperability standard. Providers should participate in an interoperable health information exchange that is nationally sanctioned by the government.
- Trend towards consumer centric health care
- Higher deductible health plans, health savings accounts, and cost sharing
- Democratization of medical knowledge by means of consumer facing Internet health portals



Communication Structure

An Overview of Our System and System Elements



Retail Health Outlet

Consumer Support

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Personal Health Advisor

FULFILLED FUNCTIONS

- 14 Educate patient about available preventive health & wellness
- 24 Provide guideline for maintenance/prevention
- 25 Provide ongoing communication guidelines & equipment

Description

An independent health “store” extending the Minute Clinic concept to an everyday shopping experience customized for health information, advice, products and services..

Properties

- Wellness/Service Packages
- Hooked-on-health Child Education
- SparkCharts for Health/Wellness
- Personal Health Advisors
- Genetic testing services and healthVault
- Geek Squad for Medical Devices and monitors

Features

- Provides a place for suppliers of Medical devices (personal monitors, etc)
- Provides a point of contact for consumer to establish care and select a primary physician

- Advocates preventive measures for health care from a consumer perspective
- Connects consumers and escalates when care is required to a network of pre-existing network of local providers
- Allows customers a place to store valuable health information that they do not want shared with their employers or health plans (e.g. results of Genetic Testing services)
- Educates patients about potential risks and pre-dispositions
- Sells “Care” packages customized for families with genetic predisposition to particular illness (e.g. Diabetes)

Discussion

Porter suggests that the product of health care should move from treatment to good health.

The Retail Health Outlet is a way to map health care services to consumer behaviors to that end. Just as a consumer would go to a Best Buy store on a Sunday afternoon, they could go to the **RHO** in order to learn about devices and conduct tests. Also, the **RHO** is an appropriate place to select a **Personal Health Advisor**, a primary care doctor, and establish an EMR for future use.

The paradigm sort of needs to shift from “Drugs while Sick” to “Multivitamins while Well” -- Technology, and some new solutions located within the health store context such as genetic testing services can help get there.

Scenario

David, a suburban family man in his late 40s, goes to the **Retail Health Outlet** on a Sunday afternoon because his new glucose monitor he bought from Bang & Olufsen online isn't working quite right.

When he gets to the **Retail Health Outlet**, he sees a counter for Genetic Testing Services (and the option to store the results in a HealthVault). Noting that his employer and health plan will not have access to this information, David is inclined to get frequent testing for his personal health.

While David is in the **Retail Health Outlet**, he sees service packages advertised for consumers like him, who are predisposed to diabetes. These service packages include the very special attention of an expert chronic care physician, access to a support group for others who have diabetes, and a standard, negotiated set of prices for glucose monitors and medications. David considers the package a good deal, and notices that he can pay at the **Retail Health Outlet** using a **Medical Visa card (All Rewards card** – see Employer slides), and the money will be remit directly from his health savings account.



Personal Health Advisor

Consumer Support

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Retail Health Outlet

FULFILLED FUNCTIONS

- 16 Provide risk analysis
- 18 Provide price of treatment
- 19 Provide cost information for procedure and treatment
- 24 Provide guidelines for maintenance/prevention
- 25 Provide ongoing communication guidelines & equipment
- 52 Negotiate discount based on risk pool of 3rd party payer

Description

The **Personal Health Advisor** is an expert of some medical training to act as a hybrid of a Certified Financial Advisor and clinical expert to help health care consumers determine their Total Assets+Liabilities and to help them plan for health conditions and mitigate against any risks that exist.

Properties

- Consultant trained in Health care billing for local area
- Some level of clinical expertise to provide guidance for certain routes of treatment (but this is not the same as Diagnosis--Caregivers like physicians and NPs will still perform clinical cycle)
- Consultant trained in long term financial planning

Features

- Will help clients (consumers of health care services) ascertain their best ways of saving money and receiving optimal health care.
- Will help maintain financial and health records for clients until full scale EMR and PHR adoption by provider organizations.

- Uses tools like the Total Cost of Wellness to help clients make strategic decisions.
- May possibly have additional revenue stream from health plan for minimizing cost of care
- Hired on a per member/per month basis
- Payable through use of HSAs

Discussion

The **Total Cost of Wellness** visualization is analogous to TCO or Total Cost of Ownership (See Figure 1).

In an increasingly materialistic world that encourages instant gratification, consumers need a way to make decisions about preventive health measures that may offset crippling future costs.

For instance, a pre-diabetic patient who may be able to invest in better nutrition and exercise now may prevent later expensive surgeries, routine medications, and the like.

A visual tool might show the overall health/wellness snapshot of a patient at a particular time, as well as include the costs of health care at certain points in time if health is not maintained.



An example might be a smoker who sees the total financial burden of continuing to smoke, including buying cigarettes and paying for lung cancer treatment later in life.

Personal Health Advisor

The **Personal Health Advisor** is a hybrid Certified Financial Planner and Clinical Expert. There already exist consumer facing services that help “maximize” Medicare assets and social security. The **Personal Health Advisor** could help all consumers, not just consumers that are Medicare beneficiaries.

These new types of providers will garner consumers as cost sharing plans increase among all economic strata.

Scenario:

(See continuation of Previous Scenario from **Retail Health Outlet**)

David sees a sign in a **Retail Health Outlet** for a **Personal Health Advisor** and is intrigued. Through a series of genetic predisposition screenings, he has learned that his family is at risk of early stage diabetes. He decides to talk to a **Personal Health Advisor** who he learns will help him understand his risk profile and discuss his “health assets”.

David really enjoys seeing his **Personal Health Advisor**, because she spends ample time walking through options

and explaining to David the decisions he could make. She shows him what his total costs might be if he needs surgery later – much greater than if he required simple preventive maintenance and the purchase of some health monitor devices now. He walks away from each **PHA** visit with a graph that shows his “Total Cost of Wellness” which he uses to make decisions with. In the event that David is hospitalized, David and his family will find these decision aids particularly helpful.

As David’s family grows (kids, etc), his understanding of insurance and potential health risks is limited. He trusts in the advice that his **Personal Health Advisor** can give him and help him choose health plans, procedures, and providers.

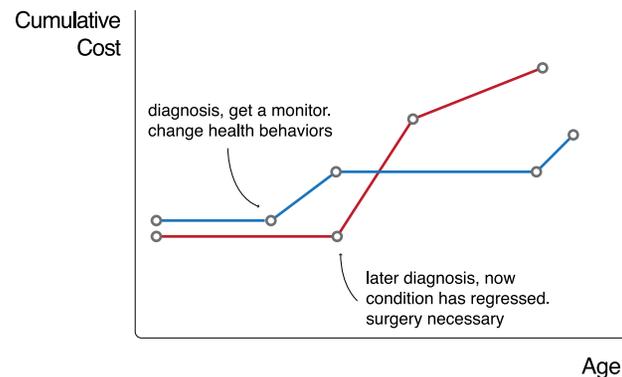


Figure 1. Total Cost of Wellness

[un]Structured Conversations

Consumer Support

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Clinical Pathway Map

FULFILLED FUNCTIONS

- 4 Collect lifestyle behavior
- 25 Provide ongoing communication guidelines & equipment
- 27 Demonstrate value provided

Description

A set of tools (devices, environments, procedures) to enable medical professionals to be able to communicate freely and comfortably with patients to create a mutually accessible dialogue. Helps to build a shared understanding of patient conditions, diagnoses, procedures and post-procedure plans.

Properties

- Electronic Chalkboard
- Privacy Pod for intimate conversations to take place with Caregiver and Patient that support information technology
- BabelHealth Translator

Features

- Builds shared understanding with physician/nurse/ caregiver and consumer.
- Provides curated links to web resources for a particular condition or to learn more about a proposed treatment (especially when there are multiple options to be considered)
- Translates medical information and medical record to “Plain English” so that consumer can be tapped into the

pertinent information in his or her medical record and understand what the PHR says

- Provides a link to an online resource where the consumer can log into his/her PHR and listen to the **Conversation** with the caregiver. This will eventually be transcribed for record and coding purposes, but useful for the consumer as well.

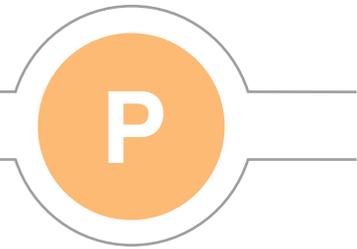
Discussion

As medical knowledge becomes democratized, electronic chalkboards and other devices/policies to enable conversations with patients will go a long way in making consumers feel more comfortable by spending more time with their physicians.

According to the American Medical Association (AMA), the average patient visit is 7.5 minutes. For most of this time, the doctor is required to document the patient’s demographic information and history of present illness.

A frequent Medicare stance is “If it didn’t document, it didn’t happen,” for the purposes of coding and billing.

Finally, consumers are deluged with information about treatment on the internet and from their physician. In order to prevent conflicting information and confusion, the physician panel might act as curators of that medical

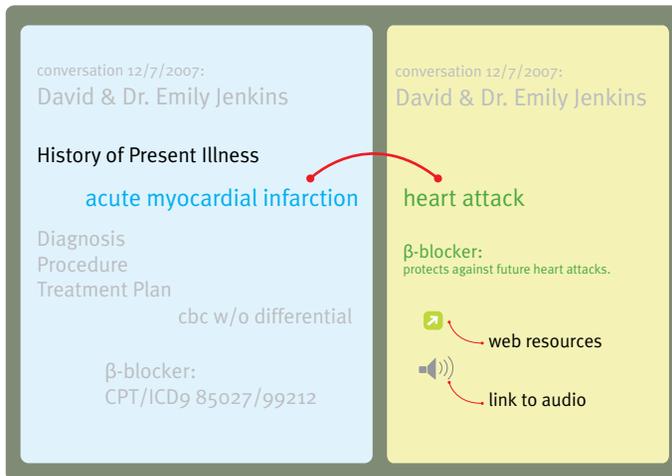


knowledge ahead of time for evidence based post procedure treatment plans.

Through use of curated web resources and the ability to double check the conversation that occurred at a clinic, patients will gain a greater understanding of their treatment plan. Over time, this will lead to patient empowerment (and less entitlement).

An eChalkboard conversation model will further the notion that both parties are equally important stakeholders in the pursuit of lower cost, optimal health and wellness.

Dartmouth Hitchcock medical center in New Hampshire has already started a Center for Shared Decision making, including printed handouts for evidence based clinical pathways.



An example of a doctor visit aided by Electronic Chalkboard

Clinical Pathway Map

Consumer Support

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

[un]Structured Conversation
Condition Treatment Price Estimate
Condition Treatment Bill

FULFILLED FUNCTIONS

- 14 Educate patient about available preventive health and wellness
- 16 Provide risk analysis
- 24 Provide guidelines for maintenance/prevention
- 25 Provide ongoing communication guidelines & equipment

Description

An electronic tool used to visually represent alternative clinical pathways diagrammatically for comparison of potential health outcomes and costs of treatment actions and non-actions.

Properties

- An electronic tool used by providers to create a visual road map of the condition and treatment process for the patient.

Features

- Helps providers to communicate and explain to consumers the choices available to them, and the implication of their choices in terms of health outcomes and total costs.
- Helps consumers to collaborate with physicians to choose an appropriate treatment course.
- Highlights the choices and possible outcomes.
- Provides an average cost estimate for each step.

Discussion

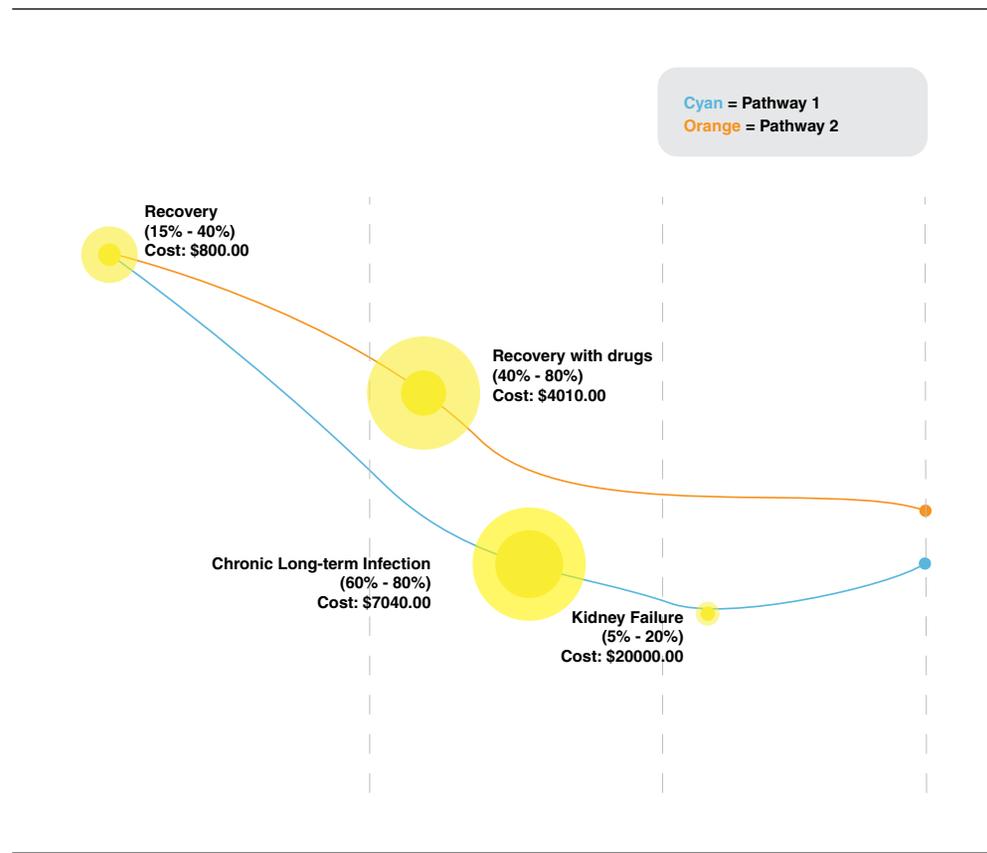
Providers need to empower patients by explaining to them what their condition is, the choices they have and the ultimate implication of these choices in terms of health outcome and costs. However, we do realize that health care is not a commodity — a procedure performed on person X will not necessarily be the same, nor cost the same, as the procedure on person Y. Yet we believe that we need to provide a solution to the problem by offering different treatment options to patients. By showing patients a visual map of the different paths of treatment, we are able to engage them in making decisions for themselves. Physicians are no longer omnipotent beings but rather they play more of an advisory, collaborative role. Patients should be educated on making choices that are right for them and share in the responsibility of the choice process.



Scenario

Ted, 55, goes to the physician’s office for a consultation on treatment for complications related to diabetes. The physician displays on a monitor his **Clinical Pathway Map**. On this map, the individual sees that there are 2 ways that his disease could progress and be treated. Also, the map gives him a rough idea of how much it would cost to treat his condition at a certain point of time. Ted sees that his disease can develop in two ways, one is that he will have a 15% to 40% chance of recovery with prescribed drugs and diet, the other is that the condition will continue to develop into a chronic long-term condition.

Ted understands that his illness is not guaranteed to be cured, but he feels more optimistic knowing that with the proper medication and diet he can control his disease.



An example of a Clinical Pathway Map

Advanced Patient Education

Consumer Support

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Condition Treatment Bill

FULFILLED FUNCTIONS

- 14 Educate patient about available preventive health & wellness
- 17 Provide maintenance alerts & analysis
- 24 Provide guideline for maintenance/prevention
- 25 Provide ongoing communication guidelines & equipment

Description

A suite of online tools intended to map health awareness campaigns to consumer behaviors that patients are more likely to use than static patient education pamphlets that are currently given out by caregivers.

Properties

- Internet Video Streaming (like YouTube)
- Spark Charts for Chronic Conditions and post-procedure treatment plans
- Clinical Pathway Maps (Evidence Based Medicine maps that show patients their options during an inpatient procedure).
- Medical language Lexicon

Features

- Provides information for consumers of health care about treatment plans, costs of procedures and imaging/testing options.
- Sold to consumers so that they ascribe value to them (unlike the free patient information given out in clinics).

- Educates consumers in ways that they are already used to learning and obtaining information (not brochures or pamphlets)

Discussion

The health care system is extremely difficult to navigate without any support from a 3rd party practitioner of health (physician or nurse).

To a certain extent, case managers and consultants can help allay this problem.

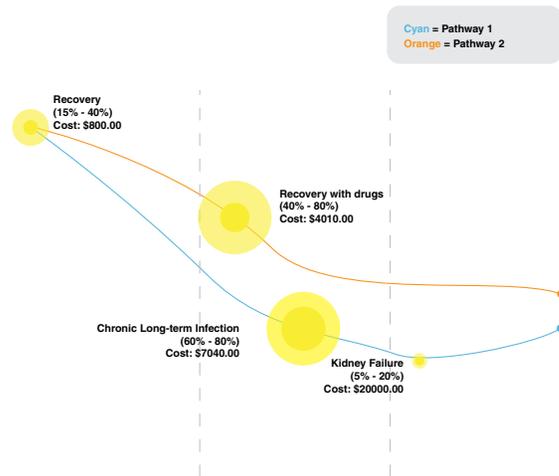
For most people, however, a series of patient education that is more tailored and uses media which consumers are familiar with will be more effective.

SparkCharts are used in academic settings to provide an overview of a typical undergraduate/graduate level course. If a SparkChart for a certain medical condition or treatment is put together and sold to consumers it might yield more empowerment and less entitlement. It may also help transition people from the “patient” experience to a “consumer” experience.

Clinical Pathway Maps are based on evidence based medicine, and help clients make complex decisions about cost and treatment through visual representation.



Medical Language Lexicon is a plain English dictionary that converts specific medical terminology and explains it in an easy way for consumers.



An example of a SparkChart and Clinical Pathway Map

Web CheckUp

Consumer Support

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Patient Responsibility Rewards
Patient Compliance Agreement
Satisfaction Collection Ratings

FULFILLED FUNCTIONS

- 5 Instantiate patient records
- 6 Collect vital signs
- 8 Collect symptoms
- 10 Collect consumer satisfaction results
- 11 Collect condition improvement results
- 12 Collect adverse effect data
- 13 Collect patient maintenance indicators
- 14 Educate patient about available preventive health & wellness
- 17 Provide maintenance alerts & analysis
- 22 Monitor
- 24 Provide guideline for maintenance/prevention
- 25 Provide ongoing communication guidelines & equipment

Description

Web CheckUp is an online relationship manager between a patient and his provider that allows providers to program the patient's appointment and education alerts, flag certain articles and findings for the patient's review as relevant to his health.

Properties

- Secure online information exchange system between patient and provider
- Online relationship manager
- Virtual “check up” system
- RSS feeds, programmable by patient and physician

Features

- Relays information through computer or reader for physician evaluation and action as needed
- Flags doctor to condition alerts with patient's permission
- Encourages patient accountability
- Supports patient education

- Supports long-term condition assessment
- Supports PHR review
- Compatible with remote monitoring devices for measuring vitals and other wellness indicators

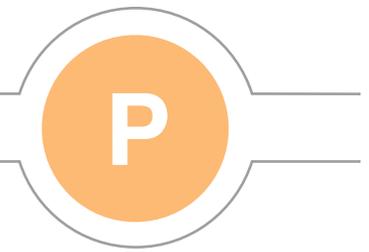
Discussion

Web CheckUp facilitates extended conversation between patient and provider and shared condition monitoring. This breaks out of the confines of the doctor's office, enabling the doctor to take better care of a patient for whom he has improved information. It also makes more convenient for the patient the necessary checkups that some conditions may warrant.

Web CheckUp has some capability to measure the patient's activity/engagement with the tool but gives the patient control of privacy settings to protect some medical searches as needed. These settings may be subject to the **Patient Compliance Agreement** set forth in advance.

Scenario

David is at home on his computer, when he gets a prompt from his **Web CheckUp** to check his blood glucose levels. He does this periodically, as set forth in his Agreement with his doctor. So David uses an at-home monitor that is compatible



with **Web CheckUp** to read his levels. The monitor relays the information to his **Web CheckUp** system that in turn relays information to David's doctor for review. If the levels were of any immediate concern, David and his doctor would get a flag for action.

Community Health Fair

Consumer Support

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

N/A

FULFILLED FUNCTIONS

- 14 Educate patient about available preventive health and wellness
- 21 Perform procedure
- 24 Provide guidelines for maintenance/prevention

Description

A series of community forums held across the country to promote health awareness and encourage individuals to take responsibility for their own well-being, improving access to information and care among those populations without insurance coverage that otherwise supports meaningful awareness.

Properties

- Physician-organized fairs that are conducted in major cities.
- Non-profit organization that promotes health awareness.

Features

- Provides lower socioeconomic groups with free screening services such as blood test, cholesterol test and physical exam.
- Refers patients to local hospitals if tested individual needs further medical treatment.
- Delivers a report to patient within 4 to 6 weeks.

Discussion

The idea for community health fairs started with an existing group of events called 9 Health Fair.

9 Health Fair was started in the late 1970's by John F. Brensike, a physician conducting heart disease research at the National Institutes of Health in Washington, D.C. As he traveled the country, he noticed that communities throughout the country are interested in screening services, but few screenings were available and the quality varied. More important, perhaps, he noted that there were no follow-up services that continued to treat and educate the targeted community.

Brensike started the National Health Screening Council for Volunteer Organizations (NHSCVO) as a means of promoting preventative health maintenance. Through this organization, the health fair concept was born and presented by NHSCVO to interested communities across the country.

Community Health Fairs enable provider efforts to reach out to under-served communities. People who do not have health insurance generally do not receive regular health screenings, and, as a result, many preventable illnesses go undetected until the disease has manifested to a point where complicated medical treatments are needed. This trend has created an enormous financial burden on the Medicaid and Medicare system.

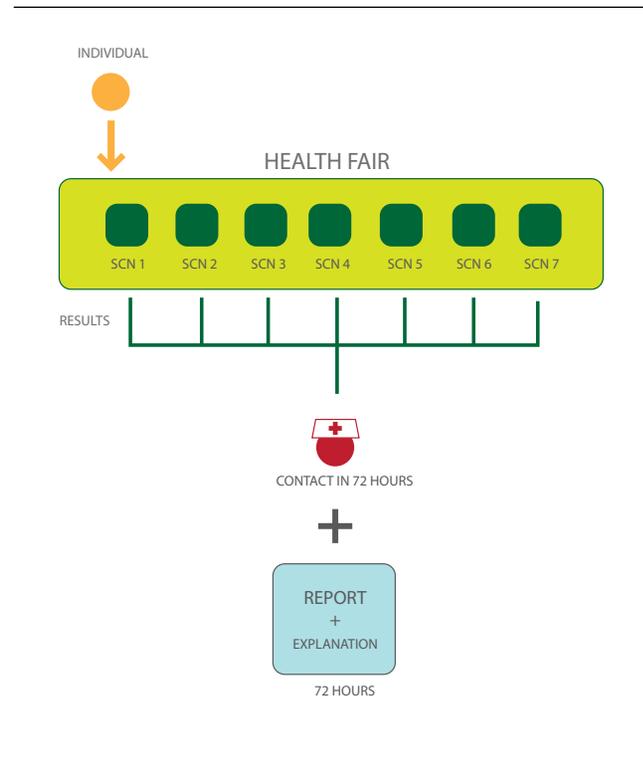


Scenario

Bob, 50, sees an ad on TV about a Community Health Fair that will take place in the next few days. He notices that it is free and is set up at a convenient location. He decides to check it out the next day.

At the fair, Bob receives a blood test and a cholesterol screening. About 36 hours later, the Bob receives a call from a nurse practitioner from the fair who notifies him about his abnormal blood test results. He has diabetes. The nurse practitioner gives Bob the name of a local physician who he can make an appointment with immediately.

Bob makes an appointment with the physician and his report has been delivered to the physician before the appointment. The physician sits down with Bob and begins evaluation and treatment recommendations.



A diagram of the diagnosis process at a health fair

Satisfaction Collection Ratings

Empower Practitioners

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Web CheckUp
Patient Compliance Agreement
ComprehensivePerformanceEvaluations

FULFILLED FUNCTIONS

- 14 Educate patient about available preventive health & wellness
- 17 Provide maintenance alerts & analysis
- 22 Monitor
- 23 Maintain
- 24 Provide guideline for maintenance/prevention

Description

A public report of provider diligence in collecting patient satisfaction feedback

Properties

- Public report of provider diligence in collecting patient satisfaction feedback
- Scale of meaningful effort to collect and report patient satisfaction feedback

Features

- Measures frequency of use and accessibility of provider forum available to patients for satisfaction feedback
- Sets frequency of use and accessibility goals for providers
- Guides providers toward meaningful consumer-centric measures of satisfaction
- Demonstrates if and to what extent a provider or provider organization attempts to gather and report meaningful consumer satisfaction information
- Carried out by a local government body or third party organization that reports on provider performance quality
- Creates incentive for providers to achieve higher commitment to patient satisfaction.

Discussion

As consumer advocates lobby for improved consumer-centric metrics for provider performance evaluation, it is reasonable to expect some adoption of and reliance on overall patient satisfaction measures.

Such measures can be validated by consumers and reporting organizations if they can be considered alongside some measure of commitment among providers to solicit this feedback.

In other words, an excellent patient satisfaction rating is less meaningful if it is the product of a single patient than if it is the product of hundreds. More reasonably, perhaps, it may also be less meaningful if each participant only offers feedback once, at the time of treatment, than if participants are able *and even encouraged* to offer feedback over time as conditions and treatment evolve.

Scenario

David, 35 and pre-diabetic, has just moved to a new city and is looking for a new doctor to manage his condition. As he browses nearby providers recommended by his health plan, he makes a point to consider the quality ratings of each provider.

He understands some metrics more than others, and as a general rule relies on patient satisfaction ratings. He compares these to the doctors' records of participating in patient satisfaction measuring to better validate the information.

Knowing that he will need to rely on a long-term relationship with a provider as a counselor of his health, David wants to find a doctor that he can connect with and really communicate with. Thus, he feels assured by those doctors that demonstrate the most commitment to getting patient feedback. This weighs heavily on his choice of provider.

Patient Comprehension Test

Patient Accountability

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Comprehensive Performance Evaluations

FULFILLED FUNCTIONS

- 14 Educate patient about available preventive health and wellness
- 22 Monitor
- 23 Maintain
- 24 Provide guidelines for maintenance/prevention
- 25 Provide ongoing communication guidelines & equipment

Description:

A tool for the physician to check that the patient understands the information conveyed during the visit and for the improving the physician's own communication skills over time.

Properties

- A tool for gauging patient comprehension of condition and treatment
- A test that illustrates the physician's ability to clearly communicate information to the patient

Features

- Provides patient the information related to the specific visit
- Measures the patient's understanding of the visit.
- Assesses the physician's ability to clearly explain medical terms to the patient
- May exist as an on-site "test," a follow-up phone conversation, or by way of email.

Discussion

By improving the quality of communication between providers and patients, patients are left feeling more enthusiastic and empowered about their medical condition and the likelihood of treatment success and adherence to physician recommendations is improved.

By conducting some form of the **Patient Comprehension Test** for each visit, providers may better ensure that their patients understand their diagnoses and treatment plans and will follow the physician's instructions. Moreover, having a mutual understanding will improve the chances that the patient not shy away from asking questions. It may also lessen the occurrence of malpractice suits.

Physicians typically don't know whether they have clearly explained a patient's condition. With the popularity of online search engines like google, patients tend to self-diagnose when they feel that their physician did not do a good job at explaining to them. This could lead to situations where the patients don't follow the physician's instructions and thus encounter complications.

A Patient Comprehension Test is as much a test of the patient's understanding as it is of the physician's ability to communicate in patient-friendly terms.



Scenario

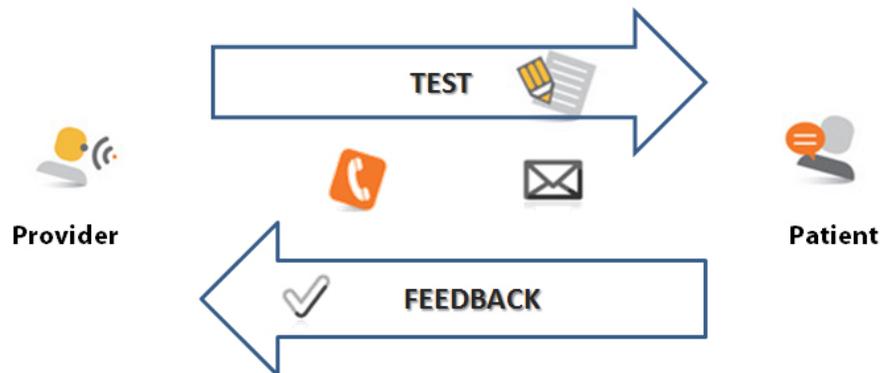
Lucy, a 27 year-old, sits in the doctor’s office. She listens to her physician’s explanation on her condition and the treatment plan.

The physician uses many terms that she doesn’t understand. Though she wants to ask some questions, she is too afraid to speak up, sensing the doctor’s hurry and not wanting to sound stupid.

She nods as he speaks, only to go home and google her condition to find more understandable explanations.

Later that day, Lucy receives an email from the doctor’s office. The emails asks Lucy to describe her condition as she understands it and asks some specific questions about his recommendations for diet and exercise. Her response suggests to the doctor that she misunderstood some of his recommendations, thus prompting him to clarify the information. Lucy confirms receipt of this clarification and her understanding of her condition.

She prints out the email and puts it on her refrigerator to remind herself to follow the doctor’s instructions.



Fair and Reliable Medical Justice Act

Empower Practitioners

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

N/A

FULFILLED FUNCTIONS

- 15 Provide treatment results analysis
- 16 Provide risk analysis
- 35 Learn best practices
- 38 Share post-procedure satisfaction among department & facilities
- 44 Cross check caregiver efficacy
- 65 Share results of performance & quality indicators
- 69 Share info with Leap Frog & JCAHO

Description

Proposed federal legislation that attempts to reform the medical malpractice judicial process by supporting State efforts to develop alternative dispute review systems for resolving malpractice claims.

Properties

- Proposed legislation, introduced by U.S. Representatives Mac Thornberry and Jim Cooper and Senators Max Baucus and Mike Enzi
- Medical liability system
- Demonstration grants to states for alternative medical litigation
- Research organization review
- Limitation on attorney fees

Features

- Authorizes Secretary of HHS to award up to 10 five-year grants to states to develop alternatives to current medical tort legislation
- Contributes to collection of “best practices” policies to improve patient safety
- Encourages disclosure of medical errors
- Requires the Attorney General to contract with a research organization to evaluate and report on effectiveness
- Requires states to consult with providers and quality organizations, insurers, attorneys and patient safety experts.
- Provides prompt and fair dispute resolution
- Reduces malpractice insurance costs for providers
- Fosters health case expertise among judges
- Allows patients to opt out or voluntarily withdraw from the program.

Discussion

As providers face increasing deterrents to practicing medicine due, in large part, to the liability incurred and the cost of malpractice insurance premiums, tort reform is critical to reign in the increasing costs and to expedite the resolution of malpractice claims for provider and patient benefit alike.

So-called “health courts” may be one approach taken by states to promote faster resolution and compensation, as well as improved health care expertise among judges that gain experience focusing on malpractice issues.

Such expertise and the support of designated research organizations and capped lawyer fees may contribute to improved discourse that shifts the focus from fearing the resolution process to recognizing the opportunity for providers to learn from it and improve care delivery.

According to Porter and Teisberg, the financial costs of malpractice are second to the costs to provider morale.

Today, the threat of malpractice suits “causes doctors to practice ‘defensive’ medicine in the form of unnecessary tests, overdiagnosis, and redundant or unnecessary treatment to satisfy patients and their families that everything possible was done. This further increases costs while potentially reducing quality, creating a vicious cycle” (27).

Porter and Teisberg do not rely on tort reform to reduce the costs of malpractice suits, instead suggesting that improved competition will be most effective in managing this problem. But as we focus so much effort on evaluating provider performance and encouraging their competition, we can expect more willingness from the provider community to embrace this shift if we still offer protections that immediately resonate with them.

Condition Treatment Price Estimate

Value Transparency

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Condition Treatment Bill
Clinical Pathway Map
Consumer-Generated Price List

FULFILLED FUNCTIONS

- 19 Provide cost information for procedure & treatment
- 28 Announce rankings and reports (marketing)

Description

A publicly available a price estimate for common medical procedures.

Properties

- Government standardized format for making price estimates.

Features

- Provides estimates of each procedure beforehand.
- Displays the variables that can affect the true price such as the drugs and equipments used, the type of health plan, rooms and facilities.
- Empowers the consumers to make the most cost effective choices wherever possible.

Discussion

A **Condition Treatment Price Estimate** helps the consumer see an approximate range of prices for each procedure before he decides on whether to accept the treatment or not. It also displays variables that can affect the true price, such as drugs and equipment used, type of health plan, and rooms and facilities chosen.

Used in conjunction with **Clinical Pathway Map**, the estimate empowers the consumer to make the most cost and quality effective choices. When used with the **Condition Treatment Bill**, the consumer can see how accurate his estimate was in comparison to the true cost of the procedure. The consumer may later report this assessment via online **Consumer-Generated Price Lists**.

Scenario

Bob, 50, has chosen a procedure for a treatment. He receives a **Condition Treatment Price Estimate** at home a day after he makes the decision. In this estimate, he sees that there is a range of prices that he can expect from going through with this procedure. Depending on whether there is an occurrence of complications, he can expect his final bill to be between \$5100 to \$9000. Though he is anxious about going through the procedure, Bob is relieved to at least knows how much he can expect to pay.



http://www.rush.edu Tel: (888) 352-RUSH

CONDITION TREATMENT ESTIMATE

Estimate made on: 11/10/2007 Estimated Total: \$ 5100

J David Doe
 1234 Main Street
 Chicago, IL 60013
 PIN: #A2C8901-U009 L

Kidney Transplant (Condition: Kidney failure as a result of diabetes)

	BEST	AVERAGE	WORST
Lab Test	\$ 200	\$ 200	\$ 200
Anti-Viral Medication	\$ 300	\$ 300	\$ 300
Anesthesia	\$ 500	\$ 500	\$ 500
Surgery	\$ 2000	\$ 3000	\$ 4000
*Equipment	\$ 500	\$ 500	\$ 1000
Room Charge (per day = \$ 150) Estimated stay: 4-20 days	\$ 600	\$ 900	\$ 3000
Estimated Total	\$ 5100	\$ 5400	\$ 9000

*Chosen Variable

To find more info about your treatment, please log onto your personal healthcare record at www.phr.com
 To see visualizations of your www.healthvisualizations.gov

An example of a Condition Price Estimate

Condition Treatment Bill

Value Transparency

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Condition Treatment Price Estimate
Clinical Pathway Map
Advanced Patient Education
Consumer-Generated Price List

FULFILLED FUNCTIONS

- 18 Provide price of treatment
- 19 Provide cost information for procedure & treatment
- 27 Demonstrate value provided

Description

A clear bill of prices for treatments administered.

Properties

- A set of minimum format standards for recording actual transactions to be adopted by all providers
- A detailed proof of the transaction

Features

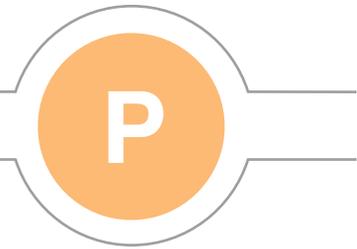
- Shows the difference between the estimated price and the actual price
- Helps to establish more accurate estimates in the future

Discussion

Providers need to empower patients by explaining to them what their condition is, the choices they have and the ultimate implication of these choices in terms of health outcome and costs.

Health Care, however, is not a commodity such that a procedure performed on person X will necessarily be or cost the same, as the procedure on person Y. Nevertheless, patient engagement may be improved by providing patients with a visual map of how their condition might develop (**Clinical Pathway Map**), an estimate of how much their treatment will cost (**Condition Treatment Price Estimate**) and a clearly defined, itemized bill.

With more clearly explained bills, patients are given more reassurance that the choices that they made are right for them.



21339

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE



HARMON DATSUN, Inc.
429 S. Wilmington St. Phone 833-5733
RALEIGH, N. C. 27602



*All warranties on this item/items are the manufacturer's. The Seller, HARMON DATSUN, Inc., hereby expressly disclaims all warranties, either express or implied, including any implied warranty of merchantability or fitness for a particular purpose, and HARMON DATSUN, Inc., neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of this item/items. This disclaimer by the Seller, HARMON DATSUN, Inc., in no way affects the terms of the manufacturer's warranty.

CUSTOMER'S ORDER NO. _____ DATE May 20 19 82

SOLD TO Nissan Foreign Car

ADDRESS Raleigh

MOSE. SOLD		MOSE. RET'G		RECD. ON ACCT.-NOTE	MISC'L	PAID OUT
CASH	CHARGE	CASH	CREDIT			

QTY.	NUMBER	ARTICLES	PRICE	AMOUNT
	99993-03341	Antenna - 1090	55.43	55.43
			49.87	49.87
		tax	2.00	2.00
			<u>51.89</u>	

PAID

MAY 20 1982

HARMON DATSUN, INC. TAX

SALESMAN HH RECEIVED BY _____

NO RETURNS ON ELECTRICAL PARTS OR SPECIAL ORDER ITEMS
10% HANDLING CHARGE ON RETURNED ITEMS
NO RETURNS AFTER 10 DAYS
NO REFUNDS WITHOUT THIS INVOICE

An auto repair bill


http://www.rush.edu Tel: (888) 352-RUSH

CONDITION TREATMENT INVOICE

Billed on: 1/01/2008 Pay by: 1/21/2008 Total: \$ 7000

David Doe
1234 Main Street
Chicago, IL 60013
PIN: #A2C8901-U009

Kidney Transplant (Condition: Kidney failure as a result of diabetes)

Lab Test	\$ 200
Anti-Viral Medication	\$ 300
Anesthesia	\$ 500
Surgery	\$ 1900
*Equipment	\$ 500
Room Charge (per day = \$ 150) Estimated stay: 4	\$ 600
Total	\$ 7000

*Chosen Variable

To find more info about your treatment, please log onto your personal healthcare record at www.phr.com
To see visualizations of your www.healthvisualizations.gov

Redesigned Condition Treatment bill

Provider-Generated Price List

Value Transparency

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Comprehensive Performance Evaluations
Bid for Health

FULFILLED FUNCTIONS

- 18 Provide price of treatment
- 19 Provide cost information for procedure and treatment
- 28 Announce rankings and reports

Description

A clear price list of provider treatments and services.

Properties

- A price list of 50 most common medical procedures.

Features

- Enlightens consumers who pay out-of-pocket.
- Empowers consumers to negotiate prices that they want to pay for certain procedures.
- Encourages providers to improve by setting benchmarks
- Encourage private insurers and public programs to reward quality and efficiency.

Discussion

Price information is notoriously elusive in health care. But there are many benefits in creating a transparent cost system. This system will serve 3 purposes: 1) help patients make informed choices about their care; 2) help providers improve by benchmarking their performance against others; and 3) encourage private insurers and public programs to reward quality and efficiency.

In order to move towards health care transparency the first step is to make costs available to consumers. Providers play their part by first explaining to consumers what their condition is, the choices they have and the ultimate implication of these choices in terms of health outcome and costs on average. Hospitals face a far harder task in listing their prices than do, for example, gas stations. For one, many people obtain health care through an HMO or PPO that negotiates its own prices with providers. For those people, a public list of prices may not be applicable for their situation. Further, very sick patients incur most health care costs, and in serious situations like that having a price list means very little. Yet providers believe one needs to start somewhere and with time and with government intervention this could lead to better evaluation of results. Pricing transparency is not a panacea for all the problems that plague the delivery of health care, but it would be a great start.

As for providers' reluctance to reveal their true costs, one can solve this problem by creating a national providers consortium that sets standards annually. Much like the IEEE (Institute of Electrical and Electronics Engineers) which is an annual conference that sets industry standards in electronics. Examples of their standards include USB and WiFi. IEEE's guidelines are widely adapted as an industry standard because its size represents fidelity and recognizability. And because all large manufacturers tend to follow these guidelines, new manufacturers will also follow and support the standards for the fear of incompatibility with other products. The same can be applied for our situation,



where providers can choose to follow the guidelines or not. The benefits of following such standards means that their information can be shared amongst the wide network since it is standardized. By following such standards they will gain establishment and recognition.

This is the formula that we are proposing in calculating the standard price for a procedure:

Base Price (Equipment, Overhead, Service Charges) + Variables (Profit Margin, Malpractice Insurance, Uncollected Debt, and Possible Complications) = Standard Price

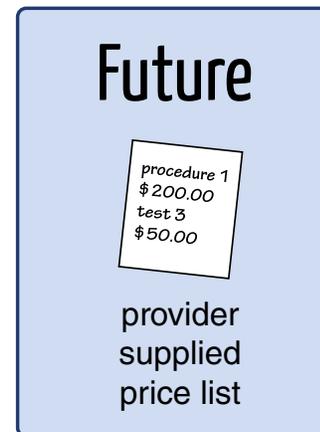
Another idea for creating a price list even if providers refuse to share their true costs: a model like “www.outofpocket.com” where consumers who had similar treatments anonymously report how much they paid out of pocket vs portions that are covered by their insurance. This way we can bypass providers and put consumers in power (see **Consumer Generated Price List**).

Scenario

The hospitals in the city of Chicago decide to publish common price lists for procedures. David, a chronic diabetes sufferer, finds that he is in need of a kidney transplant. He is able to go on a website and compare prices and quality ratings for the kidney transplant in the comfort of his own home.

David can also talk to a **Personal Health Advisor** if he needs to receive more clarification about what the prices for procedures entail. These prices include a total cost of treatment, including post operative visits and medication.

David chooses to use Northwestern Memorial hospital because it is the best price and quality combination for his kidney transplant. He is pleased that the system now has enough transparency built into it so he can make decisions collaboratively with his employer, insurance company, and health advisors (including primary physician).



Consumer-Generated Price List

Value Transparency

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Condition Treatment Price Estimate
Condition Treatment Bill

FULFILLED FUNCTIONS

- 10 Collect consumer satisfaction results
- 15 Provide treatment results analysis
- 18 Provide price of treatment

Description

An Internet compiled listing of prices consumers have paid for procedures, treatments and medications.

Properties

- Internet site where patients can go and easily find the provider locations where they have received care and enter in details about their billing in the provider setting.
- System in which billing information is automatically transmitted to the internet site upon the consumer's request. The data, is, of course, de-identified from the patient.

Features

- Decreases equilibrium price of procedures and drugs through increased transparency generated by consumer behavior
- Offers easy means of coalescing and comparing billing information from a variety of providers
- Can be used in tandem with quality information for providers to make complicated health decisions with help of **Personal Health Advisor** (see system element)

Discussion

In the age of the internet, information is democratized to prevent the abuse of consumers. While this has mostly pervaded traditional markets (especially high end electronics, where group sales are routine in some markets), it has remained absent in the realm of health care.

Eventually, as consumers are more savvy about making decisions, a provider supplied a la carte procedure price list will be effective. **Consumer-Generated Price Lists** is an interim solution that will yield more transparency and lowered equilibrium price of many procedures and drugs.

This solution works very well along with a system of Price-Based-Costing (Bidding for health care like PriceLine) in obtaining medical care. See "**Bid for Health**" system element.

Rather than the consumer of health care bearing the brunt of making a complicated decision about quality and cost, systems like the **Consumer-Generated Price List** and **Bid for Health** will yield more cost transparency.

As cost sharing plans increase in volume, consumers will gain more and more utility from these types of solutions.



Scenario

David realizes that he needs to go in monthly for screenings for his early stage diabetic treatment. Since he is going in every month, he realizes that he would like to do his best to minimize the cash expense (his health plan has increased the amount of cost sharing and decreased his premiums).

He logs on to a **Consumer-Generated Price List** site, and enters the price that his physician charged him for the last visit. He has full access to the prices from other physicians in the area. He realizes that his physician is charging him a 35% premium over the average market price in his area. Though his experiences with his physician are generally positive, he doesn't see why he is paying more than average. He decides to opt for a physician that has more convenient hours, and is located closer to his office.

After drilling down deeper on the site, David notices that there is more price information on the medication he has been taking for his diabetes. He is taking generic pills that seem to be much more cost effective and better than what other people are taking. He proudly shares this information with the rest of the user community, and pumps his fist in excitement.

Eventually, David will be able to specify a price (via **Bid for Health**) that he'd like to pay for diagnostic tests and medications, and provider will bid to offer him service. Sort of like PriceLine.com, he thinks to himself. He's very excited about the prospect of simple, human friendly technology in health care.

Now



consumer
generated
price list



cost
based
pricing

Comprehensive Performance Evaluations

Value Transparency

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Satisfaction Collection Ratings
 Provider Generated Price List
 Patient Comprehension Test

FULFILLED FUNCTIONS

- 10 Collect consumer satisfaction results
- 11 Collect condition improvement results
- 15 Provide treatment results analysis
- 27 Demonstrate value provided
- 28 Announce rankings and reports (marketing)
- 31 Collect satisfaction post-procedure
- 32 Risk-adjust results data
- 48 Share best care practices
- 51 Collect feedback and payers' satisfaction
- 57 Share performance results
- 58 Announce rankings and reports
- 61 Evaluate morbidity and mortality
- 63 Collect rankings reports about providers
- 65 Share results of performance & quality indicators
- 69 Share info with Leap Frog and JCAHO

Description

Mainstream provider performance reviews that include available objective measures and subjective measures.

Properties

- Collaborative and holistic evaluation system that includes patient and provider participation.
- Objective quality measures (such as adherence to available best practice treatment guidelines, complication rates, mortality rates, referral rates)
- Subjective quality measures (such as patient satisfaction and perception of condition improvement, overall satisfaction, perceived condition improvement, conversation quality, wait time, accessibility).

Features

- Expands quality performance measures to include outcomes information
- Emphasizes importance of subjective measures and patient feedback
- Provides for risk adjustment

- Improves consumer access and comprehension of performance reviews
- Exposes meaningful choice information and drives competition

Discussion

Porter and Teisberg insist that the right competition relies on results-driven information that supports healthy consumer markets by enabling real choice. Herzlinger also drives the point that in other industries consumer choice is empowered by available quality information but that so-called performance information in health care is on a different track that does not make quality clear to consumers.

Consider Pay for Performance initiatives that, by name, sound like they will align costs with performance quality. But by “performance,” it means recommended treatments administered, not results achieved. As Herzlinger says, this is more “pay for conformance” than it is Pay for Performance (Herzlinger, 127). “The information provided frequently [in health services] is not sufficiently comprehensive and relies excessively on the process of care rather than the care outcome” (151).

Conformance to established best practice treatments is valuable, of course, and a useful indicator of quality likelihood. *Any meaningful evaluation system should retain this indicator.* But consumers cannot rely on it. It is limited

to only those conditions for which best practices exist, and is not easy language for consumers to understand. It also stifles treatment innovation.

In interviews, physicians revealed a reluctance to expand performance measures beyond best practices adherence because only those indicators can be objectively accounted. There is, it is believed, no way to measure patient condition outcomes as reflections of provider performance because no two people are alike and too many external influences will be excluded from consideration. In other words, there is no objective way to evaluate outcomes.

How, then, in other industries, do consumers use performance quality reviews to make comfortable and informed choices about? They rely on subjective information. And it works just fine.

Herzlinger aptly compares this to shopping for a car: “Consumers seek only the information that is directly pertinent to their needs. I cannot describe exactly how cars work. Nevertheless, I am an intelligent buyer of cars because I seek the information that assesses those qualities of an automobile in which I am interested... When I buy a car, I want to know how good it is: miles to the gallon, safety, reliability. I am not interested in how the car was made” (147, 164). (By contrast, Pay for Performance measures how the car was made.)

This sort of real outcomes information must not be constrained by what is and isn't objectively measurable.

Meaningful evaluations must embrace and encourage subjective input that consumers understand and are already accustomed to using. It will adequately serve most consumers, most of the time. And this scope of information empowers consumers to decide what quality indicator is relevant to their particular conditions and circumstances. Quality browsing for a knee surgery specialist will probably be different from browsing for a doctor that can treat a sinus infection or administer a throat culture. In neither case does best practices adherence, in all its technical term glory, shed much light for the consumer.

To protect against the likelihood that only disgruntled consumers are motivated to share feedback, the system should also rely on rewards from providers, as well as incentives from government and payers to facilitate substantive data.

Last, Herzlinger makes an early and important point about traction. “Markets are equilibrated by marginal consumers, not by average ones. The discerning, last-to-buy group consists of the picky, assertive people – like the well-informed parents in the car market who are concerned with safety – who drive down price and improve quality for all the rest of us” (9).

Source: Herzlinger, Regina E. 2007. Who Killed Health Care? America's \$2 Trillion Medical Problem -- And the Consumer-Driven Cure. New York: McGraw Hill

Scenario:

Tom, 50, notices that Consumer Reports has a feature on Lasik surgery reviews, a treatment he has been considering for some time. He browses the report and the recommendations of quality indicators, among the length of time in field, number of patients treated, and overall patient satisfaction.

He goes online to review nearby Lasik providers with these tips in mind. Various quality indicators are available but he is only really interested in making sure that the doctor has a good patient satisfaction rating and low rate of complications. He does not consider wait time or accessibility because he does not prioritize convenience as he might for more routine medical services.

Tom appreciates the virtual word-of-mouth and verifies that the good ratings have been aggregated from input of many patients before choosing one closest to his home.

	Provider A	Provider B	Provider C
OBJECTIVE			
Best practices adherence	○	○	●
Rate of Referral	⊖	○	○
Return Patients/Patient Loyalty	⊖	●	○
IT Adoption	○	×	⊖
SUBJECTIVE			
Wait Time	○	⊖	⊖
Perceived Condition Improvement	⊖	○	⊖
Facility Comfort	⊖	×	⊖
Conversation Quality	○	○	×

An example of objective and subjective performance indicators



Other Indicators:

- Conversational Quality
- Accessibility
- Facility
- Return patient rate
- Health IT Adoption
- Assumed risk
- Rate of referral

MyChoice Calculator

Value Transparency

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Satisfaction Collection Ratings
Comprehensive Performance
Evaluations

FULFILLED FUNCTIONS

- 10 Collect consumer satisfaction results
- 15 Provide treatment results analysis
- 27 Demonstrate value provided
- 28 Announce rankings and reports (marketing)
- 31 Collect satisfaction post-procedure
- 32 Risk-adjust results data
- 48 Share best care practices
- 51 Collect feedback & payer satisfaction
- 57 Share provider's performance results
- 58 Announce rankings and reports
- 61 Evaluate morbidity and mortality
- 63 Collect rankings reports about providers
- 65 Share results of performance & quality indicators
- 69 Share info with Leap Frog and JCAHO

Description

An online tool for navigating available provider performance evaluations in a way catered to the consumer.

Properties

- Online public interface for the exchange of provider performance information
- Objective and subjective performance information
- User profiles of preferred quality metrics
- Aggregated provider quality score catered to user profiles

Features

- Pools provider and patient input on provider performance metrics, using subjective and objective indicators
- Allows patients to set condition and quality metric priorities searching for provider ratings
- Offers provider score based on user distribution of priority across quality metrics

Discussion

Navigation tools for assessing provider performance information can help to make the information relevant to a particular consumer for a particular condition or circumstance.

While quality information should not be reserved only for those with online access and know-how, the added benefit it allows for that population of consumers will help drive the value of the comprehensive performance information, thus improving quality and lowering prices for all.

See also discussion of **Comprehensive Performance Evaluations**.



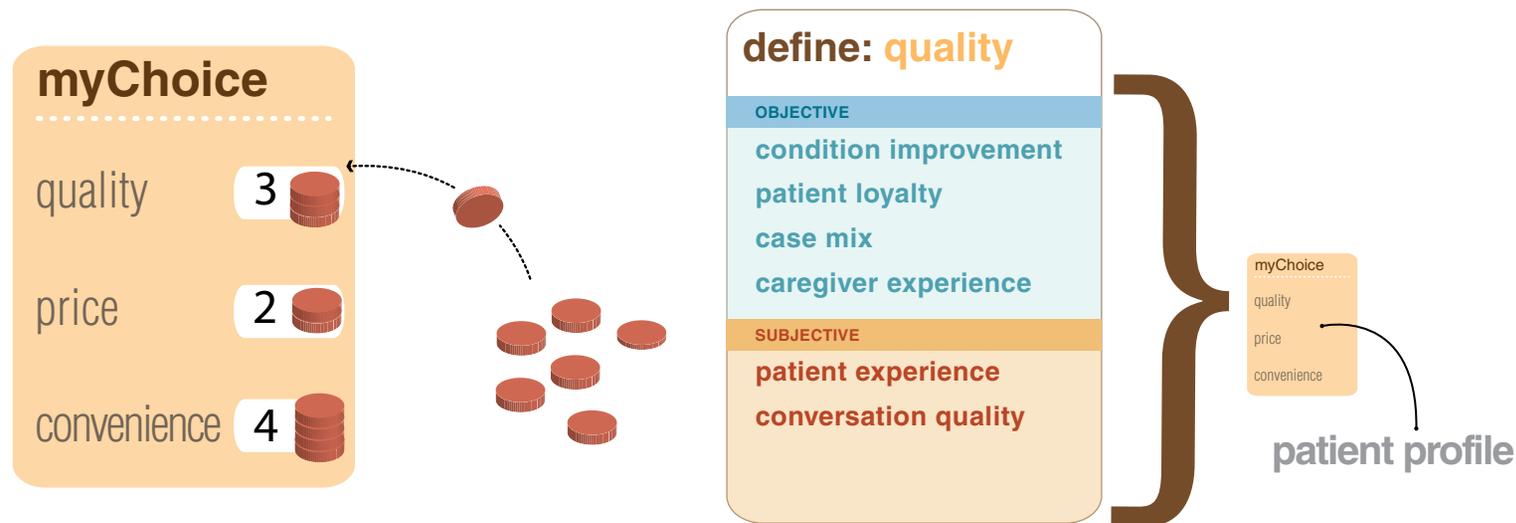
Scenario

Anita, 29, logs into her **MyChoice Calculator** to look for a sports medicine specialist because of a nagging knee problem that interferes with her running. She sets the search to sports medicine and distributes her priorities such that quality trumps price and location, while still limiting her search to within 10 miles of her office. For quality, she then prioritizes patient satisfaction and conversation quality, followed by wait time. She gives no priority to facility comfort, and distributes other indicators evenly thereafter.

Her preferences are saved as part of her profile so that **MyChoice** can make prompt and smart recommendations to her in the future, but she is always able to change her preferences as her needs change.

Anita is then able to browse those providers with high marks in her preferred quality measures. She reviews patient feedback and chooses an esteemed doctor not too far from home.

After her visit with the doctor, Anita enters her own feedback on his performance. She can update her feedback at any time, should his commitment to her condition falter or change.



Bid for Health

Value Transparency

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Provider-Generated Price Lists

FULFILLED FUNCTIONS

- 18 Provide price of treatment
- 27 Demonstrate value provided
- 28 Announce rankings and reports (marketing)

Description:

A bidding mechanism for condition treatment and procedures based on the Priceline model whereby consumers name their own price for treatment and set their own parameters for quality comparison.

Properties:

- Bidding mechanism
- Provider performance ratings
- Patient's details and medical history for select providers

Features:

- Empowers consumers to set their own prices
- Allows providers to compete on reduced prices and increased quality
- Reduces overall costs

Discussion

The best chance to reduce prices and increase quality in the health care system lies at the provider level. We know that Price information is notoriously elusive in health care. A bill soon to be introduced in Wisconsin state by Sen. Jim Sullivan, requires health care providers to list the prices of their 50 most frequently performed procedures. The bill would give consumers the right to price estimates for a procedure from the provider. But hospitals face a far harder task in listing their prices. For one, a procedure performed on one person will not necessarily be the same, nor cost the same, as the procedure on another person. This is the cost based pricing method followed by providers currently.

We suggest a shift to price based costing with the **Bid for Health** model. We believe that providers know best about their business and that consumers don't need to be bothered with how a provider calculates his costs as long as they are all inclusive prices. So now, in order to compete, a provider will try to reduce his actual costs by channelizing resources and capabilities, by reducing excess capacity and by collaboration with other providers. This would lead to lowering of prices overall and enhanced quality of care.

Scenario

Brian is an athlete who injured himself recently and now requires a knee surgery. He already has the basic knowledge about his condition, about the available providers, and the market price for the procedure he is seeking.

He logs on to the **Bid for Health** system and supplies details of the treatment he is seeking and lists down the maximum price he is ready to pay on the bidding mechanism. He is then asked to supply details such as his medical history which he does by simply giving selected providers access to his PHR. Now once this information is conveyed to providers by the bid for health system, providers within a certain time frame will look into Brian's medical history and evaluate the risks and possible complications that could arise in the treatment, based on which they would name their price.

The price itself is in the form of range that shows the best case, middle case and worst case scenario prices. The prices are all inclusive so Brian cannot be charged for more than what is initially specified by the providers. Since the provider Brian finally selected had no specific preferences for payment procedure, Brian decided to pay directly to the provider once his treatment is over.

Patient Compliance Agreement

Patient Compliance

SUPERSET ELEMENT

N/A

SUBSET ELEMENTS

Patient Responsibility Rewards

RELATED ELEMENTS

Web CheckUp

Satisfaction Collection Ratings

FULFILLED FUNCTIONS

- 14 Educate patient about available preventive health & wellness
- 15 Provide treatment results analysis
- 32 Risk-adjust results data
- 35 Learn best practices
- 52 Negotiate discount based on risk pool of 3rd party payer
- 57 Share provider's performance results

Description

An explicit agreement between a patient and his physician that emphasizes the role the patient plays in taking care of his own health, creating a shared responsibility for achieving good health.

Properties

- Agreement between provider and patient that outlines each party's rights and responsibilities
- Flexible format for providers to determine what's best for patient circumstances: paper, online, handshake agreement
- Soft or contractual deal

Features

- Emphasizes importance of patient responsibility for taking care of own health
- Personalized to cater to each patient and condition as needed
- May set requirements for frequent check-ups
- May require adherence to at-home monitoring devices
- May be enforceable by the threat of reduced incentives for adherence (see **Patient Responsibility Rewards**), ceasing the relationship or reporting delinquency to the patient's health plan.

Discussion

Porter and Teisberg emphasize that competition must be results-oriented and that the “results that matter are patient outcomes per unit of cost at the medical condition level” (6).

Meanwhile, the physician community expresses some reluctance to pursue measures of patient outcomes. This is due in part to the unreliability of science to objectively measure patient outcomes. (See **Comprehensive Performance Evaluations** Discussion.) By extension, it is logical to ask whether or not it is appropriate or meaningful to judge provider performance by patient outcomes that are not entirely up to a single provider to manage.

This concern among providers is reasonable. What's more, it could be problematic for any attempt to drive increased attention to measuring patient outcomes.

To mitigate this problem, then, any new emphasis on gauging provider performance should include new emphasis on understanding and recognizing the patient's role in his own health.

The **Patient Compliance Agreement** understands that a physician cannot take sole responsibility for a patient's health, nor be held solely responsible for a patient's health. At the very least, this **Agreement** is a tool for stirring a mental shift in patient culture and expectations that currently delegate too much responsibility to providers without

consideration for one's own end of the deal – the deal that is the provider-patient relationship.

In this most basic form, then, the Agreement is a non-binding deal; it is a conversation and a hope.

It is also worth considering a stronger role for these **Agreements** whereby incentives are used to engage patient adherence to a contract that stipulates, for example, frequency of checkups, demonstration of gym membership, participation in remote monitoring and communication devices that help the physician monitor patient health.

Such an approach may support those providers inclined to take on a high-risk, high-liability patient population.

In the case of high-demand specialty doctors, the threat of ceasing the patient-provider relationship may be an additional enforcement tool.

It is understood that much patient behavior cannot be reasonably demonstrated or enforced. It is nevertheless worthwhile to pursue this cultural shift and those patient gains that are achievable. Technological advances will only make this more reasonable.

Due diligence will be required to consider and protect against the risk of adverse discriminatory misuse of these **Agreements**.

Source: Porter, Michael E., Teisberg, Elizabeth Olmsted. Redefining Health Care. Creating Value-Based Competition on Results. Page 6.

Scenario

Upon David's first visit with a new physician with a good reputation among Diabetic patients, the doctor offers David a **Patient Compliance Agreement** that he calls "Our Rights and Responsibilities." The doctor explains that to share responsibility for David's health, he needs David to agree to an annual in-office checkup, and to monthly glucose monitor reports from an at-home monitor that will send results to the doctor and alert David and the doctor if the results require immediate attention. The doctor explains to David that his adherence to these guidelines will help the doctor take care of him, and earn David **Rewards** toward his service and treatment expenses.

Should David repeatedly break the **Agreement**, the doctor may discontinue the **Rewards** or stop treating David altogether.

Patient Responsibility Rewards

Patient Accountability

SUPERSET ELEMENT

Patient Compliance Agreement

SUBSET ELEMENTS

N/A

RELATED ELEMENTS

Web CheckUp

FULFILLED FUNCTIONS

- 14 Educate patient about available preventive health & wellness
- 17 Provide maintenance alerts & analysis
- 22 Monitor
- 23 Maintain
- 24 Provide guideline for maintenance/prevention

Description

A system of financial rewards designed to create incentive beyond good intentions or passivity for patients to seek and maintain good health.

Properties

- Rewards for patients that adhere to annual check-ups or more frequent visits as prescribed by doctor
- Points or money-back incentives system

Features

- Rewards good patient behavior over time
- Supports reliable pricing by provider

Discussion

As efforts to encourage improved patient responsibility for managing health and wellness increase, physicians may need the support of an incentives system to elicit patient adherence to compliance agreements.

A patient's health plan may be better positioned to create an incentives and punishment system to enforce patient compliance through its payment sharing arrangements with its members. It is nevertheless conceivable that providers offer some additional reward to incent good behavior.

Any such effort must be careful to protect the price list issued by providers for services, as providers move toward reliable pricing not skewed by negotiations with health plans (as assumed by the health plans team).

Scenario

David's doctor offers a rewards system that ascribes points to every check point he meets as prescribed by his doctor – such as **Web CheckUps**, office visits, demonstrated gym membership. His doctor understands that he has asked David to pay a lot of diligence to his health maintenance routine, and set the rewards to help offset any extra costs associated with the maintenance. David appreciates the support, and knows that he will lose some of these benefits if he does not keep up his diligence.



Conclusion

Technological advances in health care delivery hold significant promise in improving Americans' quality of life. Regina Herzlinger, Michael Porter, and George Halvorson have painted an optimistic picture through a set of unified policy level themes. It is clear that ushering in the new era of health care means creating solutions that resonate with an increasingly "consumer" oriented mindset. This starts with true engagement by enabling the important conversations to take place between providers and consumers of health care, and offering meaningful choices.

Designed solutions are the results of using an established framework that originates from policy level themes Porter discusses:

1. Decreasing restriction to competition and choice

Through establishment and use of governing bodies, providers should be required in the near future to share information that helps consumers make decisions. In the longer term, the quality of information shared will enhance a provider's ability to attract more consumers. And consumers that exercise choice will drive competition to increase quality and reduce costs across the market.

2. Accessible information

Leverage multiple media channels to disseminate information to consumers. Establish the health conversation in places consumers are already familiar with: Internet video streaming, and SparkChart style treatment education sheets. Using alternative agents of information dissemination such as a **Personal Health Advisor** in a **Retail Health Outlet**.

The implication that information is accessible requires full comprehension and action-ability of information. Democratization of medical knowledge accomplishes this to an extent, but it could certainly be accelerated by using Medical Language lexicons and plain-English translators for consumers' Personal Health Records.

3. Transparent Pricing

As consumers' health savvy increases, provider-issued price lists may become a reality. In the interim, creating web applications that allow consumers to share price information is an antecedent to full transparency.

Another strategy is to adopt a price-based costing model and allow consumers to choose prices for elective procedures and have providers bid on these prices. As quality becomes defined and more closely related to factors that consumers deem significant, a "PriceLine" model for elective procedures at a certain quality/experience tier becomes possible.

4. Simplified Billing

Ultimately, EMR interoperability will enable real time coding and charging to take place. Dropping the bill at the end of a procedure or inpatient visit will become a routine event. Adhering to evidence based medicine and clinical pathway guidelines, estimates and price variances will be shared with the consumer and the 3rd party payer before and after the treatment.

5. Fewer Lawsuits

By developing documentation systems that develop shared understanding, working closely with health plans to develop incentives for adhering to treatment plans, and requiring consumers to sign symmetric rights and responsibilities agreements, the threat of unfair malpractice will be ameliorated to a degree.

Ultimately, the product of the healthcare industry needs to shift from being “treatment” to “health”, as Michael Porter suggests. From a provider standpoint, this paradigm shift will only happen through a relentless focus on supporting consumers by enabling the health conversation, empowering practitioner with tools to foster health understanding, engendering value transparency by adopting pricing models from alternate industries, and distributing responsibility for health equally among consumers and practitioners.

Sources:

1. Porter, Michael E., and Elizabeth Olmsted Teisberg. 2006. *Redefining health care creating value-based competition on results*. Boston, Mass: Harvard Business School Press.
2. Goldsmith, Jeff Charles. 2003. *Digital medicine implications for health care leaders*. Chicago: Health Administration Press.
3. Halvorson, George C. 2007. *Health care reform now! a prescription for change*. San Francisco, CA: Jossey-Bass, a Wiley Imprint.
4. Herzlinger, Regina E. 2007. *Who Killed Health Care? America's \$2 Trillion Medical Problem -- And the Consumer-Driven Cure*. New York: McGraw Hill.