

As markets fragment, it is increasingly difficult to identify meaningful patterns of consumer behavior. Health and health care consumers are no exception. Knowing demographic characteristics, insurance status, and even health status are no longer enough to gain strategic insight into consumer health markets. Instead, health care and health-oriented companies must seek to understand the strategies and practices that consumers engage in, that is, the things people do to manage their health. This approach requires building consumer understanding in a different way.



**Personal health ecologies will provide an important framework for building consumer understanding**

One alternative approach is to look deeply at the personal health systems consumers create to manage their health and support their health care decisions. We call these systems personal health ecologies (PHEs). Personal health ecologies contain a broad set of resources, practices, and strategies consumers use to pursue health, make decisions, and interact with the health care delivery system. PHEs include a wide variety of activities and resources including exercise; diet; family, friends, and colleagues; information sources; clinicians; alternative providers; and over-the-counter products. The PHE is essentially a responsive network of resources that continuously transforms to meet changing health needs over time.

Not all PHEs are alike. Health status, lifestyle, lifestage, disease progression, insurance status, financial resources, and even perceptions of risk all uniquely shape individual PHEs. PHEs adapt to the changing health needs of individuals and reflect whether a person is, for instance, managing a chronic illness such as diabetes, trying to improve his or her overall well-being through food and nutrition, or rehabilitating from a seminal health event such as a heart attack.

PHEs also respond and adapt to new constraints and possibilities. For example, a sudden loss of health care insurance can ripple throughout the PHE making certain

resources beyond reach and others, such as home and over-the-counter remedies, more prominent. Embedded resources get activated and leveraged later to support everyday health decisions with relatively low risk such as selecting the best course of treatment for your newborn baby's ear infection, to more emotionally charged and higher risk health care decisions such as finding the right oncologist for your mother who was just diagnosed with breast cancer.

What is in the PHE is important because it reveals not only personal definitions of health, but also the value of various health and health care resources whether it is the doctor, an online support group, the grocery store, or a chiropractor. By looking deeply at PHEs, health and health care business and organizations can uncover the patterns of consumer behavior that will shape consumer health markets, define consumer value, and demand strategic responses in the coming decade.

This memo is a companion to the forthcoming report on the role of PHEs in managing chronic disease over time (SR-892).



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Rod reflects on the Institute for the Future's ongoing research into personal health ecologies, how they will change over the next decade, and what to look for.

**Q: | How is the concept of the PHE different than traditional understandings of consumer interactions with the health care system?**

From a clinician's point of view, PHEs have been largely constrained to the people, products, services, and information sources within the traditional health care delivery system. Our ethnographic research, however, points to a very different picture. *Health care* is an episodic experience for many people, while *health* is a daily practice. Health shapes different facets of our lives—from the way we parent and what we eat, to how we organize our schedules and the way we keep our homes. What we see then is consumers defining health broadly—beyond the absence of illness—with spiritual, emotional, environmental, behavioral, and social dimensions. This broader definition of health also implies a broader definition of what is considered therapeutic so that PHEs include a wider variety of activities and resources beyond the doctor and regular check-ups.

**Q: | Consumer empowerment has been rippling through parts of the health care industry for several years now. How do PHEs connect to this broader story?**

When we map PHEs we see that they reflect different degrees of health engagement, or the extent to which the person has a “take charge” attitude, high expectations from business, and the ability to leverage both technology and social connectivity to act on their own behalf and support their health decisions. When we look at the PHEs of the most engaged health care consumers, we see that the biggest shifts in consumer empowerment are still likely to unfold over the next decade. Three distinct behaviors provide the early signs of a very different consumer landscape. These behaviors include *self-agency*, or acting on one's own behalf or others you care about, minimizing the role of intermediaries and opening the playing field for trusted partners; *self-customization*, or the consumer tailoring of products and services to individual needs and belief systems; and *self-organization*,

which means consumers are finding ways to talk to one another and organize to get their needs met, heightening the role of social networks and the proliferation of health affinities online and in local communities. Not all consumers express these behaviors in the same way or to the same degree. There is a spectrum—and a clear direction of change.

**Q: | You emphasize “health management” in your research. What do you mean by health management?**

Actually, health management is about a lot more than management of an illness or diagnosis. We see health management in the things people do, what they read, what they buy, where they seek advice, and who they turn to with health issues. We also see it in the ways consumers prepare for doctor appointments, how they build and tap into social networks for advice, and bring information they found on the Internet into their physician visit. Focusing on where consumers spend their time, energy, and money allows us to see that a wide range of areas get “managed” to stay healthy. For instance, some people believe they can avoid sickness through food and nutrition, while other people are motivated more by enhancing their physical appearance than improving their overall health. Health management, then, includes all the strategies and practices that people engage in to interact with the health care system, make decisions, and support their overall health and well-being, and reflects health definitions, motivations, and values all of which define distinct consumer health markets.

**Q: | What about the world of complementary and alternative medicine? How is this world influencing PHEs?**

PHEs have different degrees of therapeutic diversity. That is, there is a range in the use of different health systems or modalities of care including biomedicine, Ayurveda, Chinese medicine, homeopathy, naturopathy, and so on. Most of these are captured under the label of complementary and alternative medicine [CAM]. Already, 68% of Americans have used one form of CAM and use increases with each subsequent generation. Five out of ten baby boomers use CAM, while seven out of ten of the post baby-boom generation do. PHEs dominated by one health modality, may be less able to adapt to changes in insurance coverage. Those consumers that will be able to weather change will have an optimal diversity in their PHEs—pulling from different health modalities and systems of care—relying on what each does best or is most cost effective.

**Q: | PHEs have a range of resources each playing different, sometimes overlapping roles. What's going on here?**

Redundancy is a form of risk reduction. There is little-to-no cost or quality transparency in health care and health information is fragmented. What's more, consumers are increasingly aware of the financial and physical risk inherent in health care, so consumers spend a lot of time and effort managing risk. One way to do this is to tap into a range of competing and complementary roles and resources. Some resources or providers work together in complementary ways or are alternatives when one resource is not available. This is the case when people turn to their chiropractors as their primary care physician when the family doctor is no longer accessible because of a loss of health insurance. Another reason for the wide range of resources in PHEs is the limitations of biomedicine for chronic illness, where the chronically ill, in addition to taking their prescribed medications, might also manage their health through a variety of areas like nutrition, exercise, and meditation.

**Q: | How is the use of information changing among health care consumers?**

Because information is so important when making health and health care decisions, people are always seeking reliable, trusted information. One way to do this is to tap into their social networks—friends and family, colleagues, friends of friends, and other consumers who share similar health concerns or values. In fact, the increasing use of social networks to gather health information can be seen in the proliferation of online affinities or communities. When we look at PHEs we see that health communities that share some affinity (such as a cancer diagnosis or the goal of losing weight) are critical resources for information and practices for reducing the risk of health care decisions. But, while social networks are trusted sources, there is a downside. Reliance on the opinions and information from members in social networks may expose them to more risk: the information may be wrong and lead to poor decisions. Going forward, the opportunity lies in the power of social networks as channels of information and a means to distribute not only goods and services, but also to promote healthy behaviors.



Lyn Jeffery, a Research Director at IFTF, asked Rod to share his insights about consumer health markets.



**DRIVERS SHAPING THE FUTURE OF PERSONAL HEALTH ECOLOGIES**

The environment in which consumers are constructing personal health ecologies is changing. Below are a few of the trends and drivers that will shape this environment over the next decade.

**Everything Fragments—Channels, Products, Markets, Providers**

Over the coming decade, the health care industry and consumers will face increasing fragmentation in four areas—markets, products and services, communication channels, and providers. This trend will accelerate as more products and services with real or perceived health benefits enter the marketplace. The result is complexity for consumers and businesses alike.

**Emerging Health Economy**

As consumers' definitions of health expand, IFTF forecasts the emergence of the health economy. This is an economy in which health increasingly defines consumer value and will become a key driver for growth of the whole economy, not just the health care sector.

**Shifting from a Population of Patients to a Marketplace of Consumers**

For generations physicians moved patients through a simple care path—from diagnosis to treatment to management—that put the patient in a passive role. Today, health consumers (not patients) are expected to take an active role in their health care interactions to get full value and ensure good outcomes.

**Soaring Health Care Costs and Cost-sharing**

Health care costs are increasing at double-digit rates, faster than overall inflation and wage gains, and at a pace that exceeds most employers' ability to keep up. As a result, we are likely to see continuous increases in how much insured consumers pay for health care. Certainly we will see growing contributions to premiums and co-pays for goods and services.

We will also see an increase in consumer-directed health care—a tool for compelling individuals to use economic judgment when procuring health goods and services.

**Technology Expands Expectations and Drives Consumer Demand**

Consumer demand for new and often unproven technologies, procedures, and providers is relentless and will continue in the future. Demand will be further flamed by technology, pharmaceutical, and device companies going directly to the consumer. Debates over who pays will continue.

Personal health ecologies include a range of resources and activities people leverage to support their health, make decisions, and interact with the health care delivery system. Here we pool these resources and activities together into seven categories:

- Relationships
- Activities
- Places
- Products
- Information
- Providers
- Technology

Each category represents an important area that occupies and consumes people's attention, time, and money. Each category is also a potential place where health care and health-oriented companies can play a role and expand their presence in PHEs.

**Health Technologies Will Be Defined by Nearness to the Body**

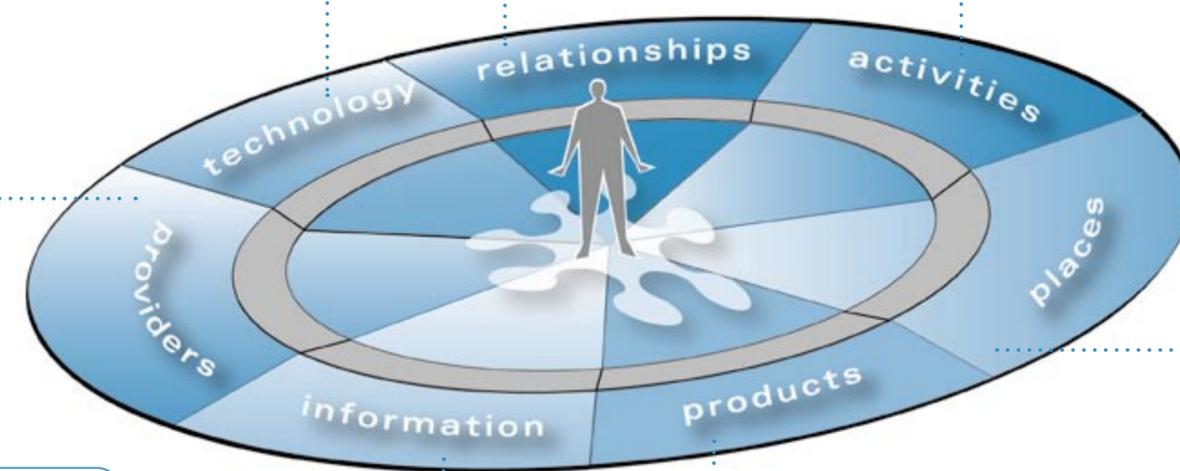
Nearness to the Body	Definition	Examples
Intimate Health Technologies	Therapies and devices that interact with the body from the inside, and often on the molecular level	Gene therapies, implants, sensors
Peripheral Health Technologies	Materials and devices that interact with the body from the outside	"Watches" that monitor vital signs, non-invasive diagnostic devices
Environmental Health Technologies	Technologies that don't directly interact with the body but promise to improve health by improving the environment	Next-generation air filters, monitors, sensors

Source: Institute for the Future

**Technology**  
Technologies present in PHEs include medical technologies accessible only through insurance and health care providers, and others that are sold directly to consumers such as information technologies, testing devices, and air/water filters.

**Relationships**  
PHEs include a wide range of relationships that support health management and decision making and include networks of friends, family, colleagues, neighbors, and members of religious or support groups. These social networks enable health consumers to find the right person/resource in a just-in-time manner.

**Activities**  
PHEs also contain the full range of activities people engage in to support their health including exercising, diet and nutrition, visiting the doctor, keeping spirits up, sleeping and relaxing, managing health care claims, balancing schedules, and gathering information.



**Suppose you were seeing a medical specialist and needed treatment for a medical condition. Which of the following would you be most likely to do? (Percent of respondents that would ... for a mild or serious condition)**

	Mild	Serious
Let the doctor decide what treatment is best	25	16
Look for information to understand your treatment options, but let the doctor decide what is best	19	17
Look for information about treatment options, and choose a treatment together with the doctor	44	62
Look for information about treatment options so you can decide for yourself what is best	12	6

Source: Institute for the Future, American Lifestyles Survey, 2004.

**Providers**  
The providers in a PHE vary with such factors as practice style and the consumer's age, lifestage, and length of time with a disease, and include doctors and pharmacists on the traditional end and less-obvious providers such as information processors and bureaucracy breakers.

**Consumers Rely on a Range of Health Information Sources (Percent of respondents that used ... as a source of health information within the last 12 months)**

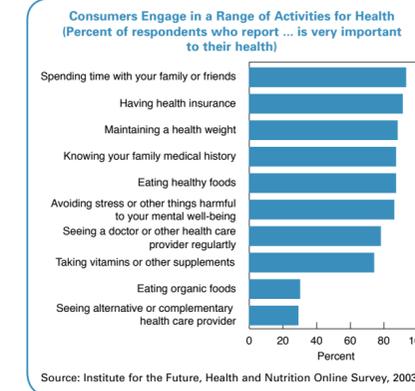
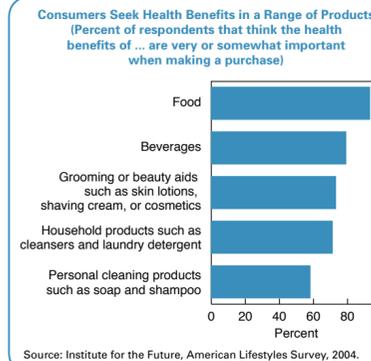
Doctors	62
Friends and family members	54
Health Web sites	47
Magazines, books, or newsletters	32
Nurses or physician's assistants	31
Pharmacists or pharmacies	26
TV programs	23
Medical reference books or journals	22
Health insurance plan or HMO Web sites or documents	18
Pharmaceutical company advertisements, Web sites, or brochures	18
Health or fitness clubs	10
Discount and other stores' displays, brochures, or employees	9
People with similar interests or needs who were contacted online	8
CAM practitioners	7
Grocery store displays, brochures, or employees	5

Source: Institute for the Future, Health and Nutrition Online Survey, 2003.

**Information**  
Information resources in PHEs include traditional sources such as physicians and a broader set including lay experts, grocery stores, complementary and alternative medicine practitioners, and friends and family.

**Places**  
The environments in which people live, work, and play shape health management and are important parts of the PHE. Places can be physical or virtual, and run from hospitals and the kitchen, to spiritual spaces and Web sites.

**Products**  
The products people include in their PHEs reflect their definition of health and range from traditional products like drugs to nontraditional products with perceived health benefits like food and beauty products.



**Environments Shape Health (Percent of respondents that agree or somewhat agree)**

I know people who have become sick because they were exposed to toxic substances in their environment	42
I think I am often exposed to toxic substances at work or in my neighborhood	26
I think I am at risk for becoming sick, simply because of where I live or where I work	22

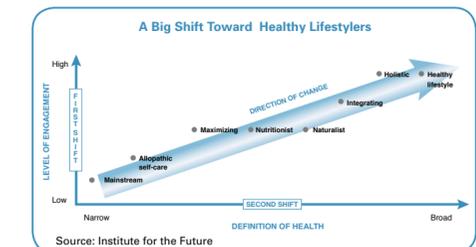
Source: Institute for the Future, American Lifestyles Survey, 2004.

**FORECAST—A MAP OF CONSUMER HEALTH MARKETS**

An individual PHE reflects a consumer's unique approach to managing health. However, a look across PHEs shows that there is a spectrum of health management strategies that will define consumer health markets in the next decade.

- **Mainstreamers**—the traditional patient
- **Allopathic self-care**—those who would rather use over-the-counter products or tough it out than see a physician
- **Maximizers**—those who are highly engaged with their physicians and try to get the most out of their health care plans
- **Nutritionists**—those who rely on food and diet to prevent illness
- **Naturalists**—those who rely on complementary and alternative medicine and their body's natural healing process, and dislike using the health care system
- **Integrators**—those who rely on the health care system for medical diagnoses, but also dabble in complementary and alternative medicine (CAM)
- **Holistics**—those who use the health care delivery system and CAM for the things each modality excels in
- **Healthy Lifestylers**—those who dramatically change their lives to maximize their health and look for health benefits across a wide range of products and services

This spectrum describes the complex ways consumers pull resources from their personal health ecologies to manage their health. These strategies are arranged along two dimensions: 1) the extent to which the consumer is engaged in his or her own health and 2) the degree to which the consumer's personal health ecology falls predominantly inside the health care delivery system or in a broader marketplace and health economy including complementary and alternative medicine, consumer products, and other choices with real or perceived health benefits. This spectrum defines an important direction of change: consumers will move away from the less engaged end of the spectrum with the narrowest definition of health and toward more engaged strategies with the broadest definition of health.



**B**y looking deeply at personal health ecologies, businesses can map out consumer health markets in different ways and uncover early signs of directional changes in the marketplace.

### **Q: | How will expanding definitions of health define new markets?**

Expanding definitions of health will drive market fragmentation, shaping consumer health markets in the next decade. As a result consumers will have a broader understanding of their health risks, the underlying causes of their illnesses, potential interventions and treatments, and who they might seek for care. From a clinician's point of view this will drive further complications in the area of adherence and compliance. But looked at in another way, this expanding definition of health will provide new ways to segment and differentiate consumer health markets—and perhaps even a healthier population. For many consumers, common problems will increasingly be viewed as health problems (e.g., balancing schedules, effective parenting, managing beauty and appearance). This means new or expanded markets for companies who are nimble enough to respond quickly to consumer's emerging needs. For health care, the challenge will not lie in defining distinct market segments but in creating distinct products and delivering a differentiated health care experience.

### **Q: | How do companies use the personal health ecology framework?**

Companies should use the PHE framework to map out their own customers and consumer segments. By looking at their own markets in a broader and holistic way, they can uncover new opportunities and insights on where and how to add value to products and services, or ways to align products or services with particular health values. Ultimately, this approach will raise the question of where to play as they begin to see how their product or service fits in a larger constellation of resources that supports health management. There may be opportunities in defining and communicating the complementary role a product plays with other products and services in the PHE or businesses might uncover places to capture more of the market.

### **Q: | How can companies respond to consumer needs now?**

One thing to keep in mind is that the point of care has been moving away from hospitals and clinics toward consumers and their homes. This is a fundamental shift. Expect to see PHEs adapt to support more self-care. This means consumers will look to the marketplace for tools that enable them to self-diagnose, self-monitor, self-test, self-treat, and so on. It also means more companies will look to self-care applications as a way to enter the health and health care market. For example, expect to see many new device products and services to quickly go self-care and develop direct-to-consumer as well as direct-to-provider marketing strategies.

### **Q: | As these trends unfold over the next decade what is the most compelling implication for health care?**

If we consider the interaction between increasingly flexible, tax-protected health dollars, growing consumer out-of-pocket spending, and the increasing role of health as a driver of consumer purchases, several implications become clear. As employers increasingly offer individuals the option of health spending accounts either through consumer-directed health plans or flexible spending accounts (FSA), they ask them to become health care consumers rather than beneficiaries. Consumers are encouraged to shop for value and they have a cache of tax protected dollars to direct to a growing market of health-related goods. Already companies from a broad spectrum of industries are responding to consumers' penchants for products and services with health benefits. As FSAs become more popular, consumers will have increasing ability to influence the shape of not only those markets adjacent to traditional health care, but health care itself. The key implication is for traditional health care to define value in clear, consumer, terms—the terms the competition in adjacent markets are already adept at using.