

# Health e-People: The Online Consumer Experience

Five-Year Forecast



Written for the California HealthCare Foundation

by

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**T**he California HealthCare Foundation is a private independent philanthropy established in May 1996, as a result of the conversion of Blue Cross of California from a nonprofit health plan to WellPoint Health Networks, a for-profit corporation. The Foundation focuses on critical issues confronting a changing health care marketplace: managed care, the uninsured, California health policy and regulation, health care quality, and public health. Grants focus on areas where the Foundation's resources can initiate meaningful policy recommendations, innovative research, and the development of model programs.

Contact: California HealthCare Foundation, 476 Ninth Street, Oakland, CA 94607; Telephone: 510.238.1040; Fax: 510.238.1388; [www.chcf.org](http://www.chcf.org)

## Survey Resources

1. Cyber Dialogue, Inc. *Ethics Survey of Consumer Attitudes About Health Web Sites*. California HealthCare Foundation and Internet Healthcare Coalition, 2000, Oakland, CA.

The California Health Care Foundation commissioned Cyber Dialogue to work with Institute for the Future to conduct a survey to measure U.S. online adults' concerns regarding the ethical conduct of health care Web sites and services on the Internet. To meet this objective, Cyber Dialogue surveyed via the Internet a nationally representative sample of 1009 U.S. online adults age 18 or older. The survey was conducted January 10-17, 2000. All respondents are members of Cyber Dialogue's database of online users. Quotas were established to interview 750 respondents who currently seek health and medical information online and 250 who do not. Respondents were sampled and their responses weighted, based on Cyber Dialogue's American Internet User Survey, to reflect nationally known norms for online adults in terms of age, gender, household income, ethnicity, health status, Internet tenure, and whether they use the Internet for health or medical information.

2. Cyber Dialogue, Inc. *The 1999 Cybercitizen Health Survey*, Cyber Dialogue, Inc., 1999, New York, NY.

The *Cybercitizen Program Surveys* are fielded by telephone to 1,000 U.S. adults 18 and older who are current and active online users, plus a matching sample of 1,000 U.S. adults who don't go online. As such, it is a robust RDD telephone survey. To reach 1,000 online adults and 1,000 non-users typically requires on the order of 12,000 or more initial screening interviews. Each Cyber Dialogue RDD survey is conducted using a freshly updated computer-generated list of all currently valid residential U.S. telephone numbers (i.e., including unlisted numbers but excluding business service numbers). Cyber Dialogue's RDD survey phone calls are conducted evenings and on weekends to increase the probability of reaching adults at home. Interviewers screen each contact made to identify adults age 18 or older and whether or not the person "currently" goes online. Subsequently,

qualified online users complete an in-depth interview, while non-users complete a somewhat shorter interview. In addition, some *CyberCitizen* surveys ask about usage by children (in both user and non-user interviews) and other adults in the household to determine the number of online households (with adults or children going online from home) and online children currently in the U.S.

3. Harris Interactive. *The 10,000 Patients Survey*, Harris Interactive, 1999, New York, NY.

Harris' online interviewing primarily relies on the Harris Poll Online database to conduct large online surveys of adults aged 18 and older. More specifically, it utilizes: 1. The Harris Poll Online (HPOL) database of 4.0 million cooperative respondents, all of whom have opted in to receive invitations to take part in online surveys; 2. Harris' proprietary technology (a) to draw complex samples from this database, (b) to e-mail to large groups of respondents, and (c) to enable large numbers of respondents to simultaneously complete the survey online; and 3. Advanced survey interviewing techniques, adapted to the online environment, including password protection, skip patterns, and visually appealing fonts and formatting.

Sample for Harris Poll Online (HPOL) surveys is drawn from the HPOL database of approximately 4 million cooperative respondents who are registered as participants in Harris' online database. E-mail addresses for respondents in the database are obtained through the following sources: Harris Poll Online registration, the Harris/Excite Poll, Harris Poll Online banner advertisements, Excite and Netscape product registrations, Harris telephone research, media recruitment, and sweepstakes sponsored by MatchLogic and its subsidiaries (e.g., DeliverE, Preferences.com, etc.). The respondents for the 10,000 Patients Study were selected from a cross-sectional sample of adults, at least 18 years old in the United States. 13,511 respondents were screened to identify 10,069 people who had a chronic condition.



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## *Executive Summary*

### *Health e-People: The Online Consumer Experience*

**H**ealth on the Internet is maturing and going through lots of changes. e-Health start-ups are burning through their venture funding, going public, finding new niches, reaching new consumers. Established health care players are finding their voices in cyberspace. Consolidation and shakeout are probably not far away.

All supply-side turbulence aside, the most important development for health on the Internet is that online consumers are actually using it — to look for health information, to communicate with one another and with providers about their conditions, to purchase pharmaceuticals and other health products online, and even to receive care. A Harris Interactive study in September 1999 found that 70 million of the 97 million American adults who were online had searched for health information in the past year, an increase of 10 million people in just six months.

This five-year forecast looks at three groups of online consumers: the Well, the Newly Diagnosed, and the Chronically Ill and their caregivers. It explores their use of the Internet for health-oriented content, community, commerce, and care.

#### ***The Well***

Well online health consumers make up approximately 60% of the consumers searching for health information online. Because these consumers are well, they don't often think about health. They search for preventive medicine and wellness information in the same way they look for news, stock quotes, and products.

#### ***The Newly Diagnosed***

Newly Diagnosed individuals are a smaller group of online health consumers (about 5% of the total). These individuals search frenetically and cover a lot of ground in the first few weeks following their diagnosis. Many of the Newly Diagnosed cast a wide net for online information and reach out to enlist the help of a large, diffuse network of family and friends.

### ***The Chronically Ill and Their Caregivers***

Though relatively smaller in number than the Well population, the Chronically Ill and their caregivers (about 35% of the total online health consumers) have the greatest potential to affect and be affected by Internet health care provision. Many individuals living with a chronic illness actively manage that illness daily and have incorporated that management into their lives. They turn to the Internet for help.

### **Drivers and Barriers**

Whether consumers are Well, Newly Diagnosed, or Chronically Ill, some key driving forces and barriers affect their interest in and use of the Internet for their health needs:

- Educated, affluent, computer-savvy people are a growing share of the population. They are more likely than others to use the Internet and to turn to it to for answers to their health questions.
- Direct-to-consumer advertising and online promotions are putting messages about health care Internet sites in front of consumers daily. Some of these messages stick and translate into online health use.
- Global information sources available on the Internet appeal to consumers who want access to a wider range of health information than their local physicians provide, and who want it 24 hours a day, seven days a week.

At the same time, some barriers are restricting the pace of development of Internet health use:

- Although groups of online consumers express different levels of concern about their privacy online, two-thirds of all online health consumers express concern about their personal privacy.
- The Digital Divide is also an online health divide. The same populations that have higher incidences of disease — minority ethnic groups, poor people, and older Americans — also are less likely to use the Internet.
- Health care is “high touch.” The kinds of health services that can be delivered online are limited.

### **Online Health Consumer Opportunities**

As consumer interest in the Internet for health care increases and converges with the growing capabilities of online health services, many opportunities will arise, both to improve health and for online health businesses. These opportunities fall into the categories of content, community, commerce, and care (see Table 1).

#### ***Content Opportunities***

When it comes to health content for online consumers, one size does not fit all — in terms of gender, age, socio-economic status, ethnicity, health status, or medical condition. Significant content opportunities are based on targeting segments of the population with information that meets their specific needs. Among the most promising segments are women, seniors, and the Chronically Ill.

#### ***Community Opportunities***

At its most basic, the Internet is a network of networks — a tool for connectivity. Internet services with large numbers of users have the critical mass to create useful online health communities. Significant opportunities exist to provide better connectivity, including links between patients and providers (at least those willing to go online), online agents to help users sort through complex information or find the best deals online, and wireless Internet services for health care. Many more opportunities will involve building communities. In addition to existing communities organized around disease states, sites may be provided for minority ethnic populations to exchange information on variations in health status and behaviors.

#### ***Commerce Opportunities***

Perhaps the most significant opportunities in the next five years will be in the area of online health commerce. This forecast details many such opportunities. Among the most promising are electronic pharmacies, online prescriptions, online pharmacy benefits management, and online health insurance and financing.

# Executive Summary

**Table 1**  
*Behaviors and Needs of Online Health Consumers*

	<b>The Well</b>	<b>The Newly Diagnosed</b>	<b>The Chronically Ill and Their Caregivers</b>
<b>Content</b>	Episodic searching for information about short-term acute illnesses, pregnancy, prevention, anti-aging, and health care providers	Very intensive searching for specific information about a condition, with instant access unlimited by geography, time of day, or exclusively Western interpretations of appropriate medical treatment	Regular searching, using keywords, for information about the newest treatments and medications, drug information, diet and nutrition information, and alternative medicine information; relatively little “site hopping”
<b>Community</b>	General chat; not much communication about specific health issues	24-hour access to experts, other patients dealing with the same conditions, alternative health practitioners, and support networks and organizations of all kinds; a key resource for getting rapidly oriented to a newly diagnosed disease; information and perspective on treatment options and providers; advice on living with the disease; support from veterans of the disease	Strong use of online chat by both the Chronically Ill and their caregivers; sharing of anecdotes; discussion of the latest news about a particular condition; advice on providers; information about experiences with disease management programs and with alternative therapies; patient advocacy
<b>Commerce</b>	Online purchases of medicine-cabinet items and health and beauty aids, such as shampoo, cosmetics, painkillers, vitamins, and diapers; alternative medicine, herbals, and nutraceuticals; and black-market items such as Viagra	Few commerce applications — and few likely to develop	Most likely the heaviest use of online commerce — to replace existing mail-order pharmaceuticals and diagnostics
<b>Care</b>	Little use except during open-enrollment periods or when considering an elective procedure or routine office visit; limited by a lack of content fitting the needs of the Well	Instantly available second medical opinions; patient education from physicians and health plans	Few applications today; most likely to develop for the Chronically Ill, including disease management programs provided by both physicians and health plans; participation in clinical trials; online transmission of vital statistics and test results

Source: IFTF

### ***Care Opportunities***

In the long run, delivery of online care will have the most significant impacts on e-health consumers. Whereas care applications will have the highest payoff, however, they will also take the longest to develop. Opportunities exist in disease management and monitoring, support for compliance with treatment regimens, electronic consults and house calls, psychological and psychosocial services, Internet-delivered diagnostics, online clinical trials, and personal medical records.

### **Forecast: Online Health and Health Care Products and Services**

In the next five years, online health-related products and services will develop in two stages. After a shakeout by business leaving a few survivors in each e-health niche, the nearer-term e-health environment (between now and the end of 2002) will be market driven, with ability to show a return on investment coloring continued venture capital support. The longer-term, and more significant, shift online (from 2003 through 2005) will result from an accumulation of health care data and an agreement on information standards that will make apparent the advantage of an online platform for business.



## Introduction

**H** *Health e-People: The Online Consumer Experience* is the second five-year forecast to map the landscape of Internet health care. This report follows and deepens Institute for the Future's previous forecast of January 1999, *The Future of the Internet in Health Care: A Five-Year Forecast*. That 1999 report mapped the landscape of Internet-based health care and forecast growth in leading-edge applications based on a series of drivers and barriers. Building on that foundation, this forecast more specifically maps one aspect of Internet health care by looking at a very important constituency: consumers. After describing some of the motivations and behaviors of consumers searching for health information and services online, this report maps market opportunities and forecasts the progression of health-related products and services online.

Experience online creates expectations in those who access the Internet for increasingly diverse and personal reasons. These online consumers search for and purchase airline tickets or books via the Internet. They send e-mail daily. They are comfortable with the Internet as an information source for shopping. This forecast seeks to answer the questions: How comfortable are they with it? Will they use it as a source of information when it comes to health? How comfortable are they with it as a medium for health care service delivery? What motivates them to trust the advice given in an online support group as much as or more than they trust the advice of their doctor?

The forecast segments online health consumers into three unique categories: consumers who are *Well*, those who are *Newly Diagnosed* with an illness, and those who are *Chronically Ill* and their caretakers. Generally, individuals in each category are motivated by their health status to behave in a particular way online.

Next the forecast describes the behaviors in each consumer segment and forecasts growth in four general categories of Internet health care products and services:

1. Content: information and services online
2. Community: online support groups and communications networks
3. Commerce: health-related goods and services for purchase
4. Care: health care treatment via the Internet

Finally, the forecast describes the market opportunities created by consumer demand for information and services on the Internet and their progression online.





## *Who Are Health e-People? A Segmentation of Online Health Consumers*

**T**he Internet has reached more American households faster than any other technology in history and is likely to grow from 40% of American households going online at least once per week in 1999 to 69% in 2010.<sup>1</sup> Though there will never be a day when everyone has access, the majority of consumers now use the Internet weekly, if not daily. Many of these individuals use the Internet to search for and purchase health and health care information, products, and services. A Harris Interactive study of September 1999 found that 70 million of the 97 million Americans adults who were online had searched for health information in the past year, an increase of 10 million people in just six months. Harris Interactive labels this group of individuals “cyberchondriacs.”<sup>2</sup> In comparison, Cyber Dialogue found in July 1999 that close to 35 million “health med retrievers” had searched for health information online in the past 30 days.<sup>3</sup> In such a rapidly changing sector, the fact that increasingly more individuals are searching for health information online and the effect of that information on people’s interaction with the health care system are more important than the number of people online at one point in time.

All online health consumers are not the same. Sick and Well people search for different types of information at different rates of frequency and with different levels of urgency. Some start searching online when a family member or friend becomes ill and they want to help. Others use the Internet as consumers of health care in the same way they consume other commodities. They shop for discounts and go to sites that attract them with a coupon, then go elsewhere when the promotion ends.

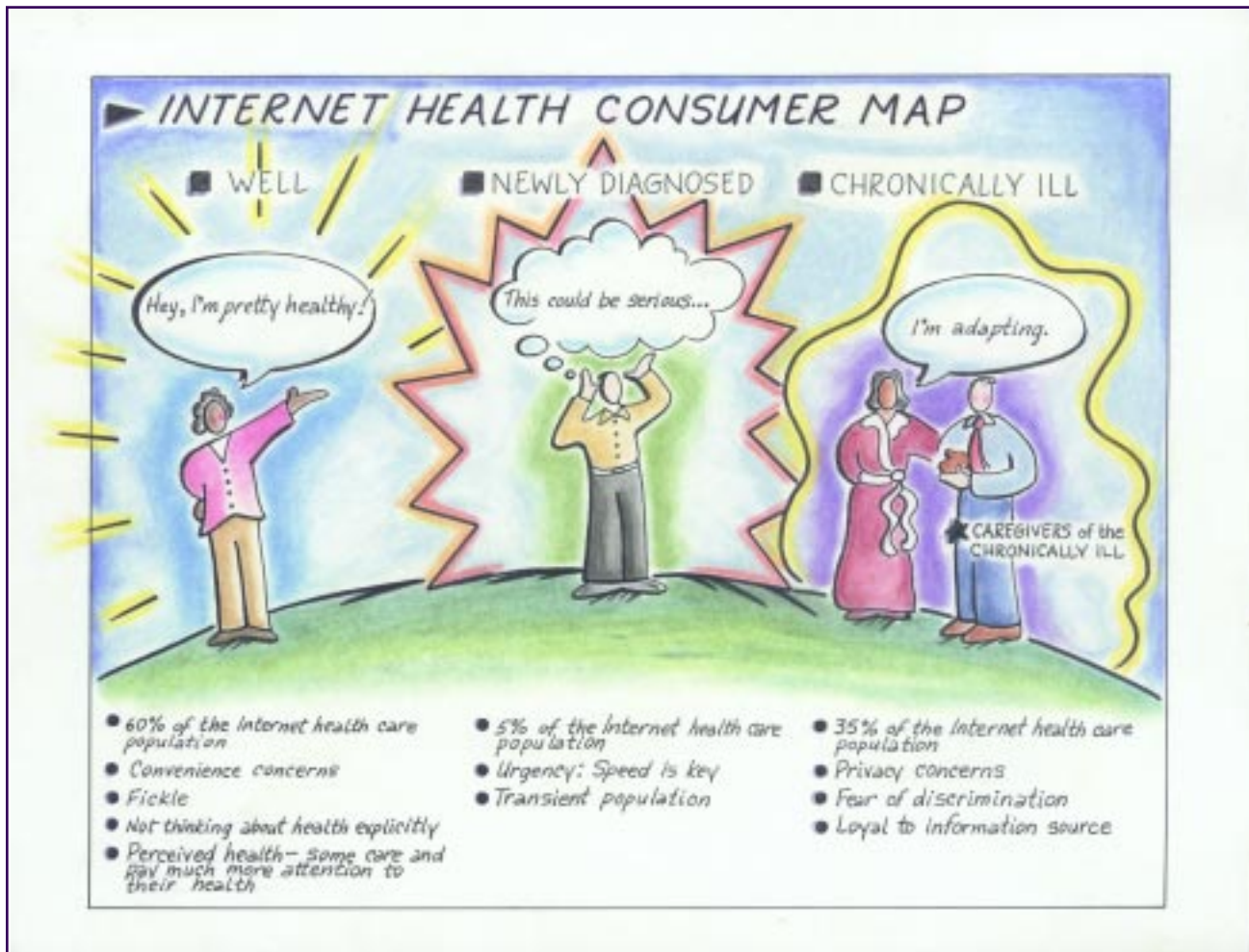
Though the interests and motivations of individuals are diverse, the online health consumer population breaks down into three general categories distinguished by overall health status and related online behavior: individuals who are Well, those who are Newly Diagnosed with an illness, and those who are Chronically Ill and their caregivers (see Map 1).

Across all categories, certain *drivers* encourage use of the Internet for health and health care, and *barriers* inhibit that use. Some drivers and barriers are unique to a particular category. Also, within each category, people’s perceptions

## Who Are Health e-People?

### Map 1

#### Internet Health Consumer Map



Source: IFTF March 2000, artwork by The Grove Consultants International

of their own health and their need to manage it dictate their activity online: People who are not sick and yet are concerned about maintaining their health or the health of their family may be more proactive and more involved with the health care system than those who are rather ill but don't take such an active role. A person's perceptions of health and the need to manage health range on a continuum from *concerned* to *carefree*. Those perceptions blur the boundaries between categories and may occasionally cause someone who is actually Well but behaves as if Chronically Ill to shift into a different behavior category.

### The Well

Well health consumers make up approximately 60% of the consumers searching for health information online. Individuals in this category are not constrained by a significant recurring illness that predetermines what and how they look for information and services. They think explicitly about health only occasionally and search for preventive medicine and wellness information in the same way they look for news, stock quotes, and products. Well online health consumers tend to be fickle and are in search of the convenience that online services can bring. The episodic nature of their health care needs, the churn of members from one health plan to another, and the cost-sensitivity of consumers inhibit loyalty to many types of health care providers and information sources in both offline and online environments. Only a few Web sites count on Well online health consumers to return regularly.

### The Newly Diagnosed

Newly Diagnosed individuals are a dynamic, smaller group of online health consumers (about 5% of the total) who behave very differently online from Well people. Depending upon definitions, roughly 4 million to 5 million people in America are diagnosed with a chronic illness such as cancer or diabetes every year.<sup>4</sup> A seminal health event such as a new diagnosis may motivate someone to search for health information online for the first time. These individuals search frenetically and cover a lot of ground in the first few weeks following their diagnosis. Though their behavior varies by the social stigma attached to their disease, many of the Newly Diagnosed cast a wide net for online information and reach out to enlist the help of a large, diffuse network of family and friends. Newly

## Who Are Health e-People?

Diagnosed individuals are a transient group of people moving from the Well to the Chronically Ill category; data about their behavior is largely anecdotal and spotty. Great potential exists to educate them early about their illness; to enhance their ability to comply with their treatment regimen; and to create loyalty to health care providers, products, and information.

### The Chronically Ill and Their Caregivers

Though relatively smaller in number than the Well population, the Chronically Ill and their caregivers (about 35% of the total online health consumers) have the greatest potential to affect and be affected by Internet health care provision. Many individuals living with a chronic illness actively manage that illness daily and have incorporated it into their lives. In comparison to Well online health consumers, these people search for health information more frequently and are more loyal to sites that meet their needs for disease-specific information and support.

As someone moves from being Newly Diagnosed to living with a chronic illness, the number of caregivers and people helping to search for information usually distills to a devoted few. Though these caregivers may be perfectly healthy, they look for disease-related information as if they had the illness themselves, searching frequently and seeking support from other caregivers online. For that reason, we have grouped the Chronically Ill and their caregivers together.

### Forecast

The proportion of individuals in these three cohorts will not change substantially during our forecast time frame. The *total* number of individuals online will increase, however, for several reasons. First, increasing numbers of new consumers will take an interest in wellness and prevention information as a better way to control their interaction with the health care system. Next, Baby Boomers are starting to care for their aging parents and, beyond our forecast time frame, will have a higher incidence of chronic illness themselves. Finally, a decrease in the amount of employer-sponsored health insurance — as companies shift from providing defined benefits to providing defined contributions — would mean increased consumer involvement in health care purchasing decisions and in obtaining health information online.

## *Drivers and Barriers*

### **Setting the Stage: Concerned or Carefree?**

**A**n individual falls on a continuum of perceived need for health management from *concerned* (those who are actively concerned with managing their health) to *carefree* (those who seem unconcerned) (see Map 2 at the end of this report). The frequency, focus, and intensity of a person's use of the Internet for health-related purposes are linked to their health status and approach to health management.

In general, individuals concerned about health tend to be women, caregivers, the Newly Diagnosed, the Chronically Ill, and the family's health decision-maker. (A subset of concerned consumers is often referred to as the "Worried Well" are individuals who are generally healthy and yet pay close attention to their health.) These consumers form the core of today's active online health consumers.

At the opposite end of the spectrum are carefree consumers. For various reasons, the carefree don't actively pay attention to their health. Carefree consumers tend to be younger and free of health problems, less insured (because they are unconcerned about their health or because they cannot afford insurance), and men (who generally tend to avoid thinking about their health unless confronted with a serious illness such as prostate or colon cancer). Individuals may not engage in proactive self-care because they feel that worrying about their health doesn't help it. With a perceived lack of need or perhaps a lack of awareness, the carefree group does not actively use the Internet to search for health information, even if these individuals do go online for other purposes (such as entertainment; music and travel purchases; and news, sports, or stock market information).

### Drivers: What Pushes Health Consumers Online?

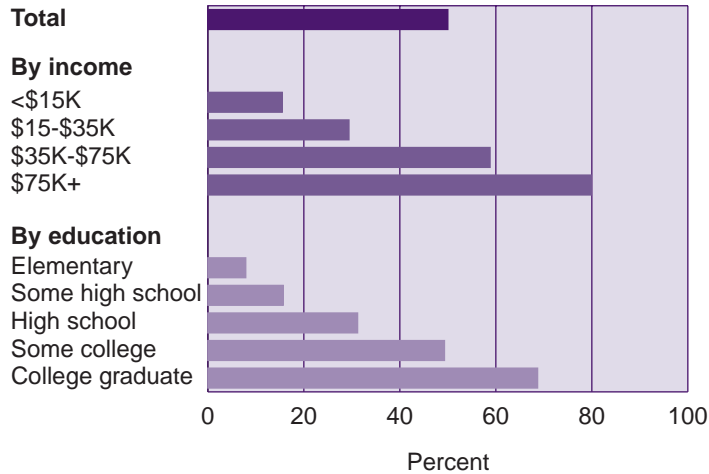
#### ***The New Consumer and the Proliferation of Information Technology***

Online health consumers behave in ways typical of *New Consumers* (individuals with a certain amount of discretionary income, experience with computers at work and/or at home, and the equivalent of at least one year of college education) and will drive adoption of the Internet for health-related purposes. New Consumers, who will make up more than half of all Americans by the year 2005, are generally active, engaged consumers seeking information, control, brands, choice, and convenience in the form of customer service. Online health consumers are a relatively affluent group in general; Cyber Dialogue found that they make up 70% of those online with a household income of \$40,000-\$74,999 and 65% of those online who earn \$75,000 or more<sup>5</sup> (for comparative data regarding technology penetration, see Figures 1 and 2). As these wealthy and educated individuals age and increasingly need health care services, their use of the Internet to seek health information will likely grow. These numbers will increase further as Baby Boomers — the majority of New Consumers — and their parents get older. Sixty percent of people ages 30-49 and 54% of those age 50 and up report visiting health Web sites when friends or family members feel ill.<sup>6</sup> In addition, daily use of the Internet for business and e-mail creates a natural, logical extension into online information and services when the need for health information arises.

#### ***Direct-to-Consumer Advertising***

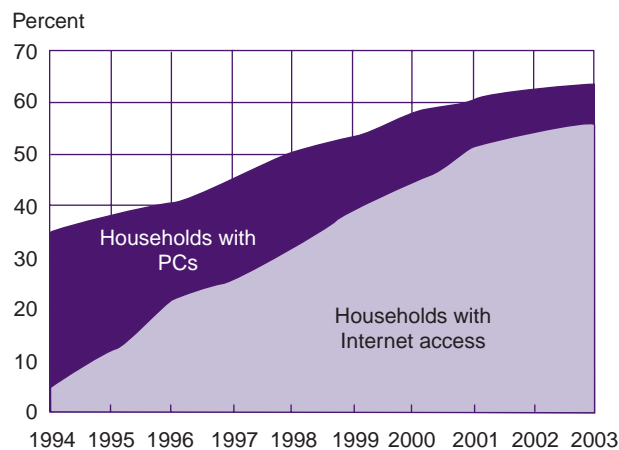
Anyone who watches television must notice the increasing blitz of direct-to-consumer (DTC) commercials for new prescription drugs. Everything from antidepressants to smoking-cessation therapies to allergy-busting miracles is heralded during prime-time viewing hours. This has carried over onto the Internet as well, where banner ads for Claritin seem to be as ubiquitous as health-related sites themselves. URLs have replaced toll-free numbers in advertising as the way to access more information about a product or service. In 1999, just 1% (\$10 million) of total DTC advertising spending went to the Internet. The

**Figure 1**  
*Technology in Households: Mostly for the Wealthy and the Educated*  
 (Percentage of U.S. households with PCs, by education and income)



Source: IFTF, 1999; National Telecommunications and Information Administration, U.S. Department of Commerce, 2000.

**Figure 2**  
*Internet and Computer Penetration in the Household*  
 (Percentage of U.S. households with PCs and Internet connections)



Source: Forrester Research, 1999.

## Drivers and Barriers

addition of online prescription drug purchasing and fulfillment supports the trend toward distribution and market channel differentiation and opens many DTC opportunities, which the drug companies are embracing full force.

### ***Online Promotions Galore***

Like DTC advertising, promotions, discounts, and coupons — all potential drivers for the concerned health consumer to shop online — have made their way to the Internet. Coupon shoppers and discriminating shoppers are finding deep discounts for online and bulk Web-based shopping for over-the-counter (OTC) products, health and beauty aids, alternative medicines, herbals, nutraceuticals, and black-market items; slowly, these shoppers are starting to make such purchases. With the average total for online purchases by individuals in 1999 less than \$500, however, big health portals are banking on health care decision makers visiting their online stores to make big purchases, and manufacturers and distributors of these products are pinning their hopes (and dollars) on this phenomenon as well.

### ***Globalization***

The Internet makes the world a smaller place, with improved and increased information access from any location to those online. Concerned consumers traditionally depended on local physicians, who may or may not have been interested in answering questions or who, even if interested, may have been under time constraints or have had limited knowledge themselves. With the Internet comes 24-hour-per-day/seven-day-per-week access to a universe of information and support — the American Medical Association (AMA) Web site; specialists who provide disease-specific resources and, increasingly, consultation on their own Web sites; patient-run sites; chat groups; discussion forums; surgery specialty centers in distant parts of the country or world; the National Library of Medicine's 9 million-citation clinical MEDLINE database. This huge network of information creates a vibrant — and often confusing — universe for the concerned consumer, who may for the first time be the direct target of health care marketing.



## Barriers: Consumers Hold Back

### Concerns About Privacy

Online consumers — both those who seek health information and those who do not — are concerned about privacy issues. Groups vary in the weight they give to privacy issues online versus in general, however, with online health consumers tending to be less concerned about privacy online (see Table 2).

The top three privacy concerns for online consumers are that the site they provide health information to will share it with a third party without their permission; that someone other than the addressee will read their e-mail; and that someone will hack into their personal health information (see Figure 3 on page 18). Online health consumers are also concerned about the vulnerability of their credit card number if they purchase online. Of those surveyed, 68% felt that the Internet poses a risk for unauthorized disclosure of their credit card number. This serious obstacle to online transactions should diminish as privacy and security technology improve and/or as regulation makes the Internet a safer place to do business and share information.

**Table 2**  
*Online and Offline Privacy Concerns*

	Total Online Adults	Online Health Consumer	Online Non-Health Consumer
Concerned/very concerned about personal privacy in general	61%	66%	59%
Concerned about personal privacy on the Internet vs. personal privacy in general			
More concerned about the Internet	52%	49%	53%
Less concerned about the Internet	8%	12%	6%
Neither more nor less concerned	40%	39%	41%

Source: Cyber Dialogue, Inc., 2000.

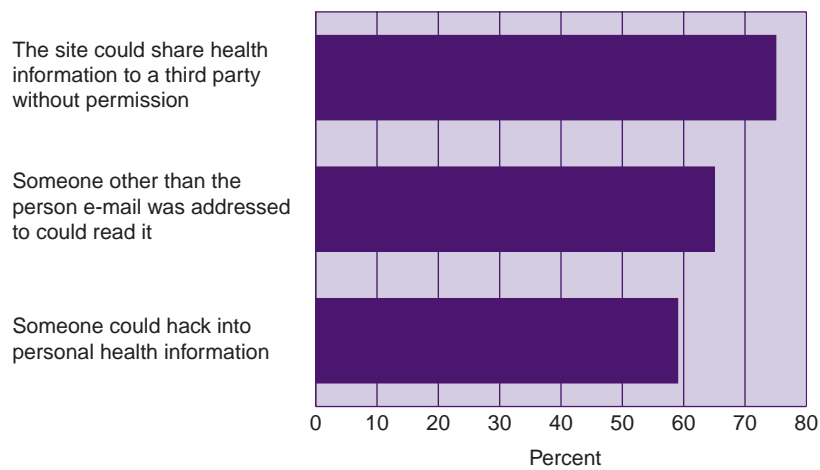
## Drivers and Barriers

Security and privacy concerns limit the willingness of both consumers and physicians to go online for health care. Checking benefits online, processing claims, and scheduling appointments inevitably require sharing personal information online that many are still uncomfortable about because of concerns regarding how that information will be used. In addition, many online health consumers worry that health information they provide online could be used by insurers to affect coverage negatively and by employers to affect job opportunities negatively (see Figure 4).

### **The Digital Divide**

For some two decades prior to the introduction of the World Wide Web in 1991 and consumer-friendly browsers such as Netscape in 1994, the Internet was used as a communications network for military and university researchers, the majority of whom were well-educated white men. To this day, the vast majority of online consumers are white, affluent, well educated, and under the age of 60. Other ethnic groups, the less affluent, the less educated, and older Americans are in danger of getting left behind. In a 1999 report, *Falling Through the Net: Defining the Digital Divide*, the National Telecommunications and Information

**Figure 3**  
*Privacy Issues of Concern to Online Consumers*  
(Percentage of online respondents rating the concern 4 or 5, with 5 meaning "very concerned")

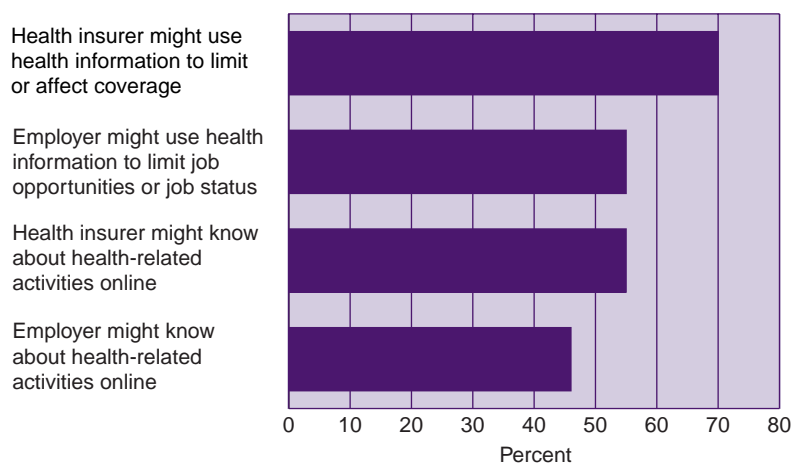


Source: Cyber Dialogue, Inc., 2000.

Administration, U.S. Department of Commerce, examined the gap between the “techno haves” and the “techno have-nots.”<sup>7</sup> Except for seniors, the techno have-nots are the same population traditionally underserved by the American health care system. The technology gap created by the Internet threatens to widen the gulf further between those with access to adequate care and information and those for whom access is limited.

A recent National Public Radio/Kaiser Family Foundation/Kennedy School (Harvard University) survey indicates that enthusiasm for the use of computers and the Internet now cuts across all incomes, all regions, all ethnic groups, and most age groups.<sup>8</sup> Also according to the survey, even techno have-nots think that computers and the Internet are making life better for Americans: Of those under 60 without computers, 76% say that computers make life better, and 56% say the Internet improves the quality of life. In fact, first-time purchasers of computers are increasingly techno have-nots. Validating the concept of a digital divide, however, 48% of Americans under age 60 who make less than \$30,000 now have a computer at home, and 31% have access to the Internet from home. Furthermore, Americans under age 60 with incomes less than \$30,000 per year and those with only a high school education or less are much less likely to *use* a computer than those with higher incomes and more education.

**Figure 4**  
*Concerns About Insurers and Employers*  
 (Percentage of online respondents rating the concern 4 or 5, with 5 meaning “very concerned”)



Source: Cyber Dialogue, Inc., 2000.

## Drivers and Barriers

The trend toward broader adoption of Internet-based technologies will continue as cheaper devices become increasingly available (44% of technophobes report that they haven't purchased computers because they are too expensive). As the Internet moves away from a strictly PC-based medium and becomes more easily available on Palm Pilots, televisions, stripped-down network devices such as NetPC, and gaming stations such as Dreamcast, the divide will surely narrow. Almost everyone has a TV; income, race, and age do little to affect the purchase of that technology. A similar phenomenon can be expected when accessing the Internet becomes as easy and affordable as buying a TV. A technology gap will remain even as the price of the technology drops, however. Just as some small percentage of Americans choose not to buy a television because they don't want it, some consumers may not see the value of the Internet. "Can't afford" may then become "don't care."

### ***The "High Touch" of Health Care***

A final barrier to online health is the need for "high touch" in health care. Health care frequently requires face-to-face interactions with a variety of people, from nurses to office receptionists to surgeons to physical therapists. Complicated procedures such as open-heart surgery will never be performed via the Internet. A nurse or counselor providing emotional support to someone newly diagnosed with cancer will never be totally replaced by an online support group. Technology and the Internet can go only so far in providing the personal touch and physical interaction that are characteristic of many encounters with the health care system.

But the Internet also is burgeoning in the health care arena partly *because* of the high-touch nature of the business. Its global quality is creating new connections for people who never would have found one another prior to the existence of the Internet. Parents form online support groups with other parents to share their experiences regarding terminally ill children. Oncology sites feature artwork and poetry by cancer sufferers. Some wired physicians are interacting with patients via e-mail. Increasingly, doctors and other health professionals are answering questions about many conditions online. In all of these ways, the "cold" technology of the Internet may ironically fill the void of high touch in a current health care system in which cost containment often translates into less time with a clinician.

## The Changing Face of the Internet

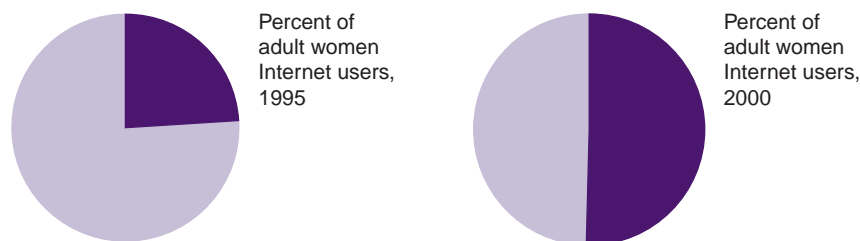
The growth of the Internet has been astounding. From just four hosts in December 1969, the Internet grew to 56 million hosts in July 1999; from only 130 Web servers in June 1993, the number grew to 9.5 million in December 1999.<sup>9</sup> International Data Corporation estimates that 137 million Americans will be online by the end of 2000.

As the Internet has grown, it has attracted more women, more ethnic minorities, and more individuals from different age cohorts. Growth online of various demographic segments brings with it demands for segment-appropriate content and services. Dozens of Web sites target particular demographic groups, such as iVillage and women.com (for women), Terra.com (for Latinos), and ThirdAge Media and Seniornet.org (for aging Baby Boomers and seniors). Targeted Web sites offer connection to community and personalization and hope to create an affinity in online consumers that will bring them back to the site.

### Women

Women are a key demographic group for online health because they control 80% of household spending and health care decisions, control 60% of all health care dollars, and purchase 75% of OTC drugs. They make up 54% of the individuals actively seeking health information online. Women are the primary health care decision makers in most households and are most often the caregivers of ill family members. According to Cyber Dialogue, the “average” online health care consumer is female, perceives herself as less healthy, and is between 40 and 49 years of age<sup>10</sup> (see Figure 5).

**Figure 5**  
*Internet Use by Gender, 1995 and 2000*  
 (24% of adult Internet users in 1995, 50.4% in 2000)



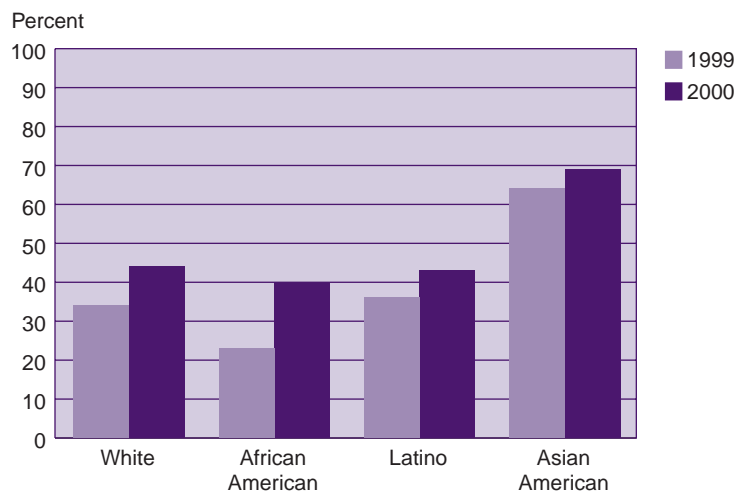
Source: Forrester Research, 1999 and Jupiter Communications, 2000

### Ethnic Minority Populations

In 2000, approximately 45% (33 million) of ethnic minority individuals were online, compared to 44% (89 million) of white Americans (see Figure 6). Incidence of disease and attitudes toward health and health care vary by ethnic group. Preferred sources for health care information also vary, as do utilization rates of alternative medicine. Ethnic minority populations value the Internet for information access and enjoy the community information and services it provides. They are less disturbed by online ads and click through banner ads at twice the rate of white online consumers.

Experience with and provision of health care for ethnic minority populations is very different than for white Americans. Some of the most consistent findings of ethnic disparities in care have been documented in the medical management of heart disease, including screening, diagnostic, and therapeutic interventions. Over the past 30 years, heart disease mortality rates have decreased across all ethnic groups, but the decline has been much greater for white Americans. African Americans continue to have the highest mortality rates related to heart disease — about 50% higher than whites.<sup>11</sup> As another example, diabetes has a 70% higher prevalence in blacks than in whites and double the prevalence in

**Figure 6**  
*Internet Participation Rate Among Ethnic Group Adults*  
(Percentage of population online)



Source: Forrester Research, 2000.

Hispanics as in whites. Furthermore, nonwhite diabetics are much less likely than whites to be under the care of a doctor. Hispanic diabetics are much less likely to take prescription medication and are more likely to use diet and exercise to control their condition.<sup>12</sup> Finally, the incidence of osteoporosis is higher in Asian women than among white women.

### **African Americans**

African Americans are the largest ethnic minority online, with 4.9 million users, according to Cyber Dialogue's annual *American Internet User Survey*. In contrast, Forrester Research claims that more than 40% of U.S. adult African Americans are online. These Internet users tend to be younger, more affluent, and more educated than their still-offline African American counterparts. BET.com, the Web site arm of the Black Entertainment Television network, has effectively allied with an existing media channel to target this ethnic minority. BET has partnerships with Microsoft, USA Network, and News Corp.'s interactive division and expects to be the big general-purpose Internet player aimed at African Americans.

### **Latinos**

A study by the American College of Physicians/American Society of Internal Medicine (ACP-ASIM) found that Latinos — 11.7% of the total population in the United States — make up more than 25% of the nation's uninsured, putting them at greater risk of suffering from untreated diabetes, high blood pressure, and cancer. Latino seniors are eight times more likely than other seniors to go blind from glaucoma. Many sites are currently targeting Latino health, including but not limited to GraciasDoctor.com, MedicinaGlobal, and the alliance of Salud.com and Quepasa.com. The big general-purpose Internet player, AOL's community Hispanic.com, does not yet have targeted health information but certainly will in the near future.

### **Asian Americans**

Asian Americans are more likely than individuals from any other ethnic group to have a PC and Internet access at home. As with other ethnic groups, great

## Drivers and Barriers

diversity exists in health attitudes and behavior within the Asian American community. Furthermore, use of health care services and attitudes toward health care vary significantly by subpopulation. Health content targeted to Asian health care consumers — aimed at preventive measures — could make a positive impact in health status.

### Seniors, Children, and Teens

Senior, child, and teen populations also are growing online. Children and teenagers tend to be relatively healthy and have few interactions with the health care system. Formative experiences using information technology and the Internet in school and for playing games online set the expectations of youngsters for later in life, however. In contrast, seniors already have significant health needs. For each decade past 40 years of age, health care costs double on average until around age 80, when they level out.

As Baby Boomers and their parents age, a unique set of drivers emerges. Baby Boomers form a large segment of the consumers currently seeking health information online. Of the 23.6 million online health information seekers, 11.6 million (49%) are 30–49 years old, and another 5.9 million (25%) are over 50<sup>13</sup>. For now, these healthy Boomers are more determined than ever to stay well and to live longer and are looking online for information to help them do that. As they age, they are likely to become more intensive users of health services. Furthermore, as their parents age, the Boomers find themselves starting to care for elderly family members.

Another driver relevant to aging Boomers is an increased need to cope with sensitive issues. Seniors need information about incontinence and erectile dysfunction, for example, but bringing these topics up with a physician can be downright embarrassing. Not only can consumers find the sensitive information they want online, but they can also buy Depends in relative anonymity and with attractive discounts.



## *Online Health Consumers and the Four Cs: Content, Community, Commerce, and Care*

**T**his report examines the behaviors in each consumer segment and forecasts growth in four general categories of Internet health care products and services:

- Content: information and services online
- Community: online support groups and communications networks
- Commerce: health-related goods and services for purchase
- Care: health care treatment via the Internet

### **The Well: Online Behavior and Forecast**

Despite the efforts of Web sites to win the loyalty of the Well, these online health consumers tend to be fickle and flit from Web site to Web site without much loyalty or regularity; their interaction with the health care system is episodic. Web sites such as onhealth.com, mediconsult.com, and drkoop.com are currently trying to build brand recognition for these consumers by offering discounted online bulk buying of health and beauty aids, herbals, nutraceuticals, alternative medicines, and wellness information. Web sites are also attempting to meet the New Consumer's demand for better customer service, choice, control, and brands by providing information in the form of personalized content and services. They entice health-interested consumers with health risk assessments and customized news services and hope the profiling data they collect will help them provide more targeted services and marketing in the future. Generally, no one online strategy always works with Well online health consumers, however, because this group uses the Internet primarily (1) to obtain information (and the resell value of information is negligible) or (2) when enticed by special deals (and consumers aren't willing to pay for something available for free elsewhere).

### ***Content: Prevention Magazine Meets Cyberspace***

When searching for health information and services online, Well online health consumers use the Internet sporadically and with varying intensity. A January 2000 Cyber Dialogue survey on consumer attitudes toward health Web sites found that 49% of online health consumers use the Internet to obtain wellness information or to find ways to generally improve their health and fitness. These consumers may go online episodically to read about whether calcium is good or bad for health, how stress affects work and family life, or what natural supplements ease the symptoms of PMS. They may find that their health plans offer online information about yoga and stretching classes, immunization schedules, and coupons for online purchasing. They may become interested in a specific topic for a short, intense period of time because of the sudden onset of illness. For example, they may experience acute indigestion or stress-induced insomnia, or they may blow out a knee while skiing. Female Well online health consumers become intense and targeted users when they get pregnant, as indicated by the large number of highly trafficked pregnancy and new-parent Web sites (e.g., [www.parentsplace.com](http://www.parentsplace.com), [www.storksites.com](http://www.storksites.com), and [www.babycenter.com](http://www.babycenter.com)).

When not pregnant or experiencing a particular illness, this group generally searches for wellness, prevention, anti-aging, and health care provider information. Survey data show that individuals in a subset of the Well group (defined by Cyber Dialogue as those who exercise three times a week or avoid unhealthy foods) report looking online most frequently for information regarding specific medical conditions (see Table 3). They do not, however, seek information on cancer, heart disease, digestive disorders, AIDS/HIV, or sexually transmitted diseases.

Uses of content for Well consumers are not likely to change much over the forecast time frame. The episodic nature of health care and the lack of interest in or need for health information among those who are healthy will change only in small ways. The blurring boundaries of health and health care and the tendency of this group to see health as a lifestyle issue rather than just as a sickness issue will, however, increase opportunities for organizations outside of traditional health care providers. Change over the next several years is likely to be on the care side of content, with more provider and plan Web sites, better security for online health information and transactions, and more patient-provider e-mail. The shift from employer-provided defined benefits to defined

contributions could increase an individual's decision-making responsibility in purchasing health care and could increase the need for online health care administrative services and information.

### **Community: They Chat, But It's Not About Health**

Online health communities usually grow around shared interest in a specific disease or health issue. A subset of communities focuses on general health and wellness issues for the Well. These Well online health consumers tend to chat more about lifestyle issues than about health, and they're less likely to feel an urgent need to reach out to others online. In contrast to Newly Diagnosed or Chronically Ill chatters, the Well tend to go online sporadically to chat about diet, exercise, aging, dating, and sex. Without acute health care needs, they have little interest in talking about particular conditions.

Well online consumers are satisfied with the chat that they find on big health portal sites when looking for lifestyle and health-related information. Blurring the boundaries of health, portals such as Dr. Koop, Onhealth, Intellihealth, i-Village, and Mediconsult offer diet and fitness features. Well consumers are not

**Table 3**  
*Content Interests of Well Online Consumers*  
 (Percentage of consumers within the subset who seek online health information)

	Frequent Exercisers <sup>a</sup>	Healthy Eaters <sup>b</sup>
<b>Types of information sought by Well subgroups:</b>		
Specific medical condition information	70%	71%
Diet and nutrition information	49%	51%
Women's health information	38%	42%
<b>Issues considered important to stay informed about:</b>		
Choices that maintain good health	78%	79%
Relevant treatments and medications	76%	79%
Personal risks for becoming ill	70%	72%

Source: Cyber Dialogue, Inc. 1999.

a. Those who exercise 3+ times per week.

b. Those who avoid unhealthy foods.

## Online Health Consumers

likely to be a captive market for online communities, however, as are consumers with chronic or acute illnesses or those caring for family members with chronic or acute illnesses.

As with content use, the nature of chat room use for Well consumers is unlikely to change in the near future. The sheer number of chatters is likely to grow as more people get online, but what these people talk about won't look very different in the next several years. Even the most savvy sites will be hard-pressed to come up with winning chat strategies to capture the hearts of the fickle or the uninterested Well. The best these sites can hope for is to have gained enough loyalty and brand recognition during episodic encounters to keep these consumers when they get pregnant, find themselves as caregivers for an ill family member, start experiencing the common woes of aging (such as menopause, osteoporosis, and incontinence), or have the occasional accident that requires surgery, medication, and/or physical therapy.

### **Commerce: They Buy Some Online, But Not Much**

The Well online health consumer is the target of many online drugstores that offer discounts on stock medicine cabinet items and health and beauty aids — such as shampoo, cosmetics, painkillers, vitamins, and diapers — and many online stores offer deep savings for bulk buying. Other products that Well consumers seek to buy online are alternative medicine, herbals, nutraceuticals, and black-market items. The global Internet market is something of a double-edged sword when it comes to alternative medicine, not always readily available in local drugstores, in that it opens this market beyond U.S. borders and makes easier the purchase of unregulated items considered dubious by many U.S. physicians (e.g., shark cartilage to treat cancer or human growth hormone for anti-aging). In the herbals/nutraceuticals area, online stores are finding ready audiences for things such as Saint-John's-Wort, ginseng, and *Ginkgo biloba*, a trend not likely to taper off unless the Food and Drug Administration (FDA) steps in to regulate these areas more closely or unless some widely publicized, massive health problem arises from the use of an herbal product. Online health consumers who use alternative medicine shop online for health and beauty products (24%) more than any other online health-seeking group.<sup>14</sup>

The online black market — most notably Viagra vendors — is another popular destination of Well online health consumers. Many online sites, both in and

outside the United States, offer black-market bulk sales of Viagra with or without a prescription, for example, so that people can access the drug without embarrassing, time-consuming, and costly visits to the doctor. Another way Well people are using the black market is to purchase prescription drugs quickly and cheaply from sources in Latin America and Asia, for example.

While the Well segment is not likely to change what it shops for online substantially over the next several years, improvements in privacy and security technology will make online buying more popular. As noted earlier, a barrier to purchasing online today is concern about credit card numbers becoming vulnerable. If the Internet and software companies can develop a compelling technology to address consumer concerns — or if government regulation were to step in with successful legislation that didn't kill online transactions — online shopping for health products could grow a great deal.

### ***Care: Tentative Forays into Online Care Interactions***

By definition, Well people don't currently use online health care much and don't need to see a doctor often. For those with health insurance, the open-enrollment period may be the only time during the year when they interact with their health plan. The appeal of looking up online benefits and scheduling appointments is therefore limited for this group, other than during open enrollment or when an elective procedure or routine office visit is being considered. Similarly, Web-based health risk assessments, online personal medical records, and e-mail messages to and from physicians are of less importance to this group than to the Chronically Ill. Web sites and portals *are* trying to capture this group with a branded approach that tracks an individual through the life stages and targets marketing and information appropriately, hoping that the Well will have greater need for online health care services as they age.

Even when limited interest doesn't dissuade the Well consumer, limited availability of online care features does. Only a few companies and plans currently offer online benefits information and appointment scheduling (e.g., WebMD and Blue Shield of California), and though this number is growing, it represents a small segment of today's market. Of all online health consumers, 50% say they are interested in using a plan site, but only 10% currently do so.

### The Newly Diagnosed: Online Behavior and Forecast

Newly Diagnosed individuals make up less than 5% of the Internet health care population, according to Institute for the Future (ITF) research.<sup>15</sup> For this cohort, urgency drives behavior, and speed is key. These people have just been diagnosed with an illness that may change their life, and they want answers *now*. The Internet is a huge boon for the Newly Diagnosed because of its 24-hour-per-day/seven-day-per-week nature and because of the wide range of information available.

The Newly Diagnosed population is transient. Those just diagnosed with chronic conditions quickly begin to behave like Chronically Ill online health consumers, and those diagnosed with episodic conditions may return to behaving as Well online health consumers, though more informed and, most likely, more active from then on. Data specific to this small transient cohort are sparse. Among all online health consumers, 57% say they were prompted to first use health sites after a doctor's diagnosis (when they became Newly Diagnosed).

The largest source of Newly Diagnosed online health consumers is members of the Well category who experience a seminal health event. A small portion may come from members of the Chronically Ill group who get diagnosed with new conditions or comorbidities. As online health consumers, the Newly Diagnosed search out very specific information about the given condition and its treatment, and they generally cast a wide net for sources, asking everyone they know who may possibly have some information. This group shares many characteristics with all online health consumers: 71% personalize health sites, and 71% register at health sites. Those diagnosed with a chronic condition or disease are more likely than those who are cured to continue to use this personalization regularly.<sup>16</sup>

Advances in medical technology will both shrink and increase the size of this group as gene therapy prevents certain chronic diseases from occurring and genetic testing uncovers disposition to disease. Those technologies will not be widely available within the five-year time horizon of this forecast, however. Content-searching behavior, both from Web sites and among communities, is likely to grow steadily among this group as Internet use grows in general. This growth will occur primarily in new-patient education and immediate follow-up after a diagnosis. No technology, privacy, or regulatory breakthrough is likely to cause this segment to grow substantially — but neither is any negative event likely to cause the Newly Diagnosed to use the Internet less for general information searching. While the segment is small and frenetic in its Internet

use, online service providers should build this group into their branding and loyalty-building strategies for potentially heavier users down the road.

### ***Content: Information, Please!***

The major driver leading the Newly Diagnosed online is more and more easily accessible information. The Internet provides instant access unlimited by geography, time of day, or exclusively Western interpretations of appropriate medical treatment. Newly Diagnosed online health consumers have 24-hour access to experts, other patients dealing with the same conditions, alternative health practitioners, and support networks and organizations of all kinds. Like Chronically Ill online health consumers, the Newly Diagnosed are empowered by access to much of the same clinical research available to their physicians. The number of searches on the National Library of Medicine's clinical database, MEDLINE, went from 7 million in 1990 to more than 120 million in 1999. A third of those 1999 searches were conducted by consumers. Sixty-five percent of all Newly Diagnosed online health consumers look for specific information about their condition. Most are amateur at seeking health information online and search in a scattered and intense way. Met with an information glut, many are overwhelmed by their news and frustrated by the disorganization of online health information.

Most Newly Diagnosed individuals desire information about their condition particularly at the time of diagnosis. Proper support and information can influence the course of treatment, emotional state, and identity of the Newly Diagnosed in relation to their condition. Information at this high-leverage time can make a difference in an individual's feelings of self-effectiveness and ability to comply with a treatment regimen.

### ***Community: Help – Now! Communities to the Rescue***

Newly Diagnosed online health consumers leap into the fray of chat and discussion groups with urgent calls for help and messages of advice. Literally thousands of online communities dedicate themselves to specific diseases and conditions. These communities benefit from a loyal population of Chronically Ill online health consumers, experienced individuals ready to offer the Newly Diagnosed support, information, and advice when their frantic messages come at any hour of the day, any day of the week, from any locale.

## Online Health Consumers

Here the Internet can provide that ironically electronic “high touch” so characteristic of health care. For many Newly Diagnosed, being sick for the first time brings with it worry about the impact on self, family, work, and friends. Whether the condition is episodic or chronic, minor or acute, elements of worry, fear, and weakness set in. Many Newly Diagnosed, reluctant to talk openly and honestly about their worries with family members for fear of overwhelming them, turn to the Internet and enjoy the anonymity it offers. Prior to the wide availability of the Internet, finding such peer support other than through health care-sanctioned support groups could be challenging.

The Newly Diagnosed online health consumer may also join chats to search for providers and treatment information. A consumer’s definition of quality health care providers may differ from a provider’s definition of quality. Everyone wants access to the best care, but individual preference varies as to whether that means the latest technology, the best bedside manner, longer times to recover in the hospital, caring nurses, or staff who can answer questions about complex insurance issues clearly. Newly Diagnosed online health consumers seek information about these “softer” characteristics of health care in online discussion communities from individuals who have faced the same decisions.

Online discussion groups also prove fertile for those seeking information about alternative treatments. Interest in every possible avenue of treatment is often high immediately after diagnosis. Whether alternative treatment information is any more reliable from discussion groups than from general Web sites (where bias can be hard to distinguish) is debatable, but the Newly Diagnosed generally trust anecdotal information derived in discussion groups more.

### ***Commerce: Not Big Among the Newly Diagnosed***

Because they’ve just received their diagnosis, Newly Diagnosed online health consumers aren’t really in a position yet to know what goods or services they want or need to buy. If they’ve been Well consumers who have bought health, beauty, and OTC products via the Internet in the past, they may buy some prescription drugs online — but given the size and transience of the group, these purchases are probably negligible. Newly Diagnosed online health consumers are much more likely to purchase online health care goods and services if the condition they’re diagnosed with turns out to be chronic.



**Care: A Second Opinion, Please**

America’s Doctors (www.americasdoctor.com) is an example of a type of Web site that thrives among the Newly Diagnosed. It is one of few existing online consult and second-opinion sites that provide anywhere/anytime services to the Newly Diagnosed, often more quickly than a physical visit to a second doctor and for a much lower price. In addition, while online second-opinion seekers pay for the online consult out-of-pocket, they avoid the hassles of having to schedule an appointment with a second, third, or fourth physician and of having to get payer approval for multiple opinions. Among all health consumers, and particularly among those who have just been diagnosed with an illness or who have had significant change in their health status, 30% say they go online to get a second opinion.<sup>17</sup> Online health consumers are taking advantage of this service despite the relatively small number of Web sites currently offering it. This activity is likely to grow as more sites figure out how to maneuver the legal hurdles of providing this kind of service.

Another important online health care activity among the Newly Diagnosed is patient education. Internet-savvy health plans and physicians encourage their Newly Diagnosed patients to go online to learn more about their disease or condition, its treatment, and its management. Pharmaceutical companies are also trying to garner consumers by offering new patient education features on their Web sites. Like online second opinions, the area of online patient education is likely to grow as more health plans and physicians understand its benefits.

Consumers still trust their health care providers more than anyone else (see Table 4), so the wise physician and health plan will create loyalty among their

**Table 4**  
*Trusted Sources of Information Among Adult Internet Users*

<b>What makes you trust information on a health-related Web site?</b>	
Recommendation of your doctor, nurse, or pharmacist	74%
Sponsorship of a well-known health care company or organization	61%
<b>Which of the following do you use as sources of health-related information?</b>	
Doctors	77%
Nurses and nurse practitioners	42%
The Internet	13%

Source: Cyber Dialogue, Inc., 2000.  
Note: Survey of adults who visited health and medical Web sites in the past three months.

## Online Health Consumers

Newly Diagnosed patients and members by acting as the trusted guide to online information. While we may not see dramatic growth in the number of doctor-sponsored patient education sites over the next five years (because of time constraints and legal issues), health plans are getting with the program, and an increasing number offer a variety of well-done, patient-friendly education features. There will be limited growth among physician sites of a type of “information prescription” for proactive, Web-savvy patients: a list of five to ten Web sites they consider credible sources for patients seeking health information.

### **The Chronically Ill and Their Caregivers: Online Behavior and Forecast**

As with offline aspects of health products and services, the Chronically Ill and their caregivers are *the* online market to target. Approximately 35% of the Internet health care population, this group lives with and adapts to chronic diseases and conditions such as diabetes, hypertension, allergies, asthma, arthritis, depression, migraine headaches, and osteoporosis. Unlike the Newly Diagnosed individual, often with many caregivers casting a wide net, the Chronically Ill individual is served by comparatively fewer caregivers (16% of all online health consumers characterize themselves as caregivers).<sup>18</sup> For the Chronically Ill and their caregivers, quality of life is of utmost importance. Not only do these people need to learn and stay current about their conditions, but they generally self-medicate with OTC and/or prescription drugs, and sometimes they self-test to monitor and manage their illness. Seventy-six percent search the Internet for specific medical condition information, and 52% search for drug and pharmaceutical information.<sup>19</sup> The conditions of the Chronically Ill generally cannot be cured but can be treated and managed over time, and because of this, online behavior is far more predictable and greater in volume over time for this group than for the Well or the Newly Diagnosed online health consumer.

The Chronically Ill and their caregivers are driven to online health for a variety of reasons. They seek support and up-to-date information about their condition, and sites often can provide the latest findings and discoveries more quickly than personal doctors can. Caregivers seek moral support and advice for themselves and clinical information for those experiencing the condition or disease. Disease management programs for conditions such as asthma, hypertension, and diabetes encourage consumers online with sites sponsored by health plans.

Chronically Ill online health consumers and their caregivers value the anonymity offered by the Internet more than Newly Diagnosed online health consumers do because they have more experience with the stigma of a chronic condition and its effect on their daily lives.

### ***Content: Beyond Traditional Providers***

Chronically Ill online health consumers have specifically targeted information and health care needs. Unlike the Newly Diagnosed, whose online search may be frenetic, the Chronically Ill and their caregivers live with a given set of conditions that vary little over time. Their searching is consistent, frequent, targeted, and predictable. They do not hop from site to site depending on their condition of the moment; nor do they surf a vast, amorphous universe with many caregivers to locate advice and answers. Of this group, 76% look for information that will keep them abreast of the newest treatments and medications, 52% for drug information, 39% for diet and nutrition information, and 30% for alternative medicine information. When they search for wellness information, they do so in conjunction with the management of their specific disease or condition and with their efforts to improve their quality of life. Seventy-nine percent of Chronically Ill online health consumers and 85% of caregivers conduct keyword searches to find online health information, rather than browse portal categories (50%) or go directly to known sites (54%). On average, the Chronically Ill have a higher number of sites bookmarked (30.5 bookmarks) than other online groups (19.5–25.7 bookmarks), an indicator of frequent and regular visits to the same favorite sites.<sup>20</sup>

For many of the Chronically Ill, if conventional treatments have failed, alternative therapies hold some allure. In fact, alternative medicine sometimes drives these chronic sufferers online; 41% of all adult online consumers with chronic conditions report using alternative healing treatments. According to 1999 Cyber Dialogue data, 31% of all online health consumers search for alternative or experimental approaches to health care. Thirty-six percent of these alternative treatment seekers characterize themselves as in fair or poor health. A large proportion are probably Chronically Ill or behave as if they are. With the Internet's ability to eliminate geographic communication barriers and with shifting demographics increasing the proportion of ethnic minorities in the United States, different perspectives of healing, prevention, and wellness are reaching Chroni-

cally Ill online health consumers. Interest is proliferating in non-Western healing techniques, alternative therapies, herbals, and nutraceuticals, and an increasing number of sites and products address these interests.

### ***Community: Active Chatters***

For Chronically Ill online health consumers and their caregivers, online chat offers access to a community day or night, around the globe. More than any other group, Chronically Ill online health consumers and their caregivers share anecdotes, discuss the latest news about a particular condition, offer advice on providers, discuss experiences with disease management programs, and explore experiences with alternative therapies. The anonymity enjoyed by online communities, free of the stigma of certain conditions, will become more important as genetic testing and screening increasingly reveal genetic predisposition to chronic illness and if genetic profiling becomes popular as a way for employers and health plans to control the financial risk associated with health insurance.

Not wanting to burden spouses, parents, siblings, or friends with the daily trials of caring for someone who is chronically ill, caregivers also seek moral support in online chat and, in fact, use chat more than any other online health consumer group. Most disease and condition sites currently recognize the unique needs of caregivers and offer chat services to this growing group. Caregivers can find warmth and security in anonymous online chats where everyone is coping with the same issues.

Another function of online chat for Chronically Ill online health consumers and their caregivers is patient advocacy, whether that means gaining funding for research, assuring nondiscrimination in the workplace, or achieving better health coverage for diseases and conditions. Patient advocacy is most effective when critical mass is reached. Prior to the widespread use of the Internet, achieving this critical mass could be difficult. Today, advocacy groups can form and grow quickly around online chat rooms. Not only are patient advocates empowered by their access to patients via the Internet, but Chronically Ill online health consumers and their caregivers are empowered by being able to participate in support of their cause.

### ***Commerce: Heading Online to Buy***

The Chronically Ill are active consumers of often costly pharmaceuticals and monitoring devices. Because they need a predictable and constant supply of drugs and devices, they stand to gain more than other segments of online health consumers from purchasing products online. This group purchases mail-order prescription refills and benefits from discounts for doing so. These discounts are currently extended by mail-order houses fulfilling the orders or by health plans that encourage mail-order refills to reduce costs.

As more people go online, as Internet-seasoned Baby Boomers age and increasingly suffer from chronic conditions, and as online transaction security improves, mail-order prescription refilling is likely to move more aggressively to the Internet. Mail-order houses that continue to offer savings on shipping charges, bulk discounts, e-mailed reminders for prescription refills, and one-stop shopping for other health and beauty aids and OTC products will win among Chronically Ill online health consumers.

### ***Care: Marcus Welby, M.D. Meets Cyberspace***

Because the Chronically Ill represent a smaller, more targeted segment than the Well, and because of the early success of some-health monitoring programs, online disease management is likely to increase over the next several years. It is easy to picture a universe in the not-too-distant future in which a Chronically Ill online health consumer uploads monitoring results or vital statistics from a home PC or television to the doctor's office, communicates via e-mail with the physician or nurse if the results are unusual or require treatment, orders a new drug online from an approved supplier, gets an e-mailed reminder that it's time to reorder insulin kits, and receives online hand-holding in a chat room after learning of the development of foot ulcers. This application will most likely be built as member-only portions of health plans and disease management programs, at pharmaceutical company sites, or as intranets. The technology is available today, but few players have yet integrated it with services.

In addition to using the Internet to help manage a disease or condition, Chronically Ill consumers go online to learn about and enroll in clinical trials and to participate in and keep abreast of research. An increasing number of sites now actually allow people to enroll in clinical trials online or inform providers of

## Online Health Consumers

availability for a trial. CenterWatch ([www.centerwatch.com](http://www.centerwatch.com)), for example, was one of the first descriptive Web-based listings of clinical trials.

In the next few years, these health consumers will increasingly communicate important vital statistics and test results to providers via sensors through the Internet. Leading-edge companies such as Health Hero Network are using simple devices such as the Health Buddy to begin this type of disease monitoring already. The impact of online disease monitoring and management can be expected to grow over time as more companies offer Internet-enabled sensor technology, which will mean greater self-monitoring, fewer office visits, and reduced costs for health plans, physicians, and disease management programs. A win-win situation for all, this trend is likely to meet little resistance.

## Online Health Consumer Opportunities

**H**ow big the online health consumer market is depends on whom you ask about it. Forecasts range from a low of \$10 billion for all e-health in the year 2004 (according to Jupiter) to a high of \$28 billion for just the business-to-consumer (B2C) sector of e-health for the year 2003 (according to E\*Offering) (see Table 5). Variations in the forecasts have to do largely with just how consumer e-health is defined and what’s included under the e-health umbrella.

Another way to assess the size of the online health consumer market is by visitor growth. The number of online health consumers has been growing rapidly and, depending upon the source, is estimated to be between 35 and 70 million Americans.

One goal of health care Web sites is to create user loyalty by creating a relationship with consumers. Such relationships are developed through “stickiness” — that is, the ability of the Web site to re-attract the surfer so that the user visits a growing number of pages and stays “stuck” for longer periods of time. Theoretically, the longer a visitor “sticks” to the site, the more likely that person is to be converted into a buyer of products and services from the site. Sticky

**Table 5**  
*Valuation Forecasts for e-Health Markets*

Analyst	e-Health Sector	Valuation Forecast
E*Offering/2003	Information/ads	\$400 million
E*Offering/2003	B2C e-health	\$28 billion
E*Offering/2003	B2B	\$168 billion
Jupiter/2004	OTC	\$600 million
Jupiter/2004	Medical supplies	\$800 million
Jupiter/2004	Nutraceuticals	\$1.7 billion
Jupiter/2004	Personal care	\$2.3 billion
Jupiter/2004	Rx	\$4.6 billion
Jupiter/2004	Total e-health	\$10 billion
Forrester/2004	e-Health retail	\$22 billion
Forrester/2004	e-Health B2B	\$348 billion

Sources: E\*Offering, Jupiter Communications, Forrester Research, 2000.

## Online Health Consumer Opportunities

relationships in health care generally share three characteristics; they are personalized, customized, and relevant. Jupiter Communications has found that one-third of surfers are motivated to provide personal information if they will receive better online content. Jupiter also found, however, that surfers are more likely to give data to support their stock portfolios (27%) than to shop (8%) or to receive health information (7%).

### Content Opportunities

In providing health content to online consumers, one size does not fit all — in terms of gender, age, socioeconomic status, ethnicity, health status, or medical condition. More women than men perceive all types of online health information as important. Minority online health consumers, more so than nonminorities, value information about doctors, health practices, other people's health experiences, and comparative shopping. Opportunities involve taking advantage of these differences.

Marked differences are also evident in the types of health information groups of people retrieve online. More women than men search for information on specific conditions, alternative health, mental health, and (what may appear obvious) women's health, for example. Men retrieve information on sexual and reproductive health and cancer somewhat more often than do women. Ethnic minority online health consumers retrieve information on sexual and reproductive health issues, insurance plans, and smoking more often than do nonminorities. In the category of household income, twice as many people in the <\$50K category search for mental health information as do those with incomes >\$50K. In addition, more households with <\$50K in income search for health information on alternative medicine, sexual and reproductive health issues, and smoking than do those in the upper-income group.

Finally, favorite sources for online health information vary substantially by chronic condition and by consumer demographics. Recognizing and responding to the needs and desires of a particular demographic or disease group means compartmentalizing online searching by niche. Opportunities for the most successful content development on the health care Internet could be separated into a variety of niches (see Tables 6 and 7).



**Table 6**  
*Favorite Online Sources for Health Care Information  
(By Chronic Condition)*

Rank	Source	Total	Most Frequent Chronic Conditions
1	Health Web pages	59%	Gynecological, sinusitis, menopause, thyroid
2	Medical journals	38%	Migraine, GI <sup>a</sup> disorder, asthma, sinusitis, skin condition
3	Academic/research institutions	36%	GI disorder, skin condition, sinusitis, depression, thyroid
4	Patient support or advocacy groups	32%	Thyroid, GI disorder, diabetes, gynecological
5	Government-sponsored sites	24%	Diabetes, GI disorder, migraine
6	Pharmaceutical companies	23%	Diabetes, GI disorder, sinusitis, migraine
7	Media	19%	Depression, gynecological, skin condition
8	Medical societies	16%	Arthritis, sinusitis, GI disorders
9	Individual physicians	15%	Migraine, diabetes, depression, asthma
10	Hospitals	12%	Migraine, sinusitis, skin condition, asthma, arthritis
11	Health insurance companies	11%	Seasonal allergies, diabetes, skin condition

Source: Harris Interactive, 1999.  
a. Gastrointestinal.

**Table 7**  
*Favorite Online Sources for Health Care Information  
(By Personal Trait)*

Rank	Source	Total	Most Frequent Personal Traits <sup>a</sup>
1	Health Web pages	59%	Female (65%), >\$75K (64%), fair/poor (62%)
2	Medical journals	38%	>\$75K (45%), >college (44%), 18–39 (42%), Hispanic (42%)
3	Academic/research institutions	36%	>College (45%), >\$75K (44%)
4	Patient support or advocacy groups	32%	Fair/poor (42%), 40-64 (37%), >\$75K (37%)
5	Government-sponsored sites	24%	>\$75K (29%), >college (29%)
6	Pharmaceutical companies	23%	Fair/poor (29%), >\$75K (27%)
7	Media	19%	<\$25K (22%), fair/poor (21%), >college (21%),
8	Medical societies	16%	Fair/poor (21%), >college (18%)
9	Individual physicians	15%	Hispanic (20%)
10	Hospitals	12%	Hispanic (16%), fair/poor (15%)
11	Health insurance companies	11%	Hispanic (19%), African American (16%)

Source: Harris Interactive, 1999.  
a. Personal traits include: gender, age, income, education, ethnicity, and self-reported health status (e.g., Individuals whose favorite online source for health information is health web pages are primarily females with an income of more than \$75K per year and fair/poor self-reported health status).

### ***Opportunity: I'm Every Woman***

Women show marked differences from men in their use of the Internet for health. Women control 80% of household spending and purchase 75% of OTC drugs. A lucrative demographic in the drug market is women and children (really women, since mothers buy most kids' medications). Seventy percent of all pharmaceuticals are prescribed for this group. In addition, women are more likely than men to personalize a site and to participate in a health-related chat room. College-educated, higher-income females look to the Internet to learn to deal with the current system — and circumvent it. Targeting women, PlanetRx.com bought exclusive link placement on the popular iVillage women's network.

### ***Opportunity: The Fastest-Growing Internet Population – Seniors***

The number of seniors on the Internet grew by more than 18% in 1999, making this group the fastest-growing Internet population.<sup>21</sup> According to Greenfield Online, seniors may be the second-largest untapped customer base. Seniors control about half of all after-tax income, they're online, and they're buying. Ninety-two percent of U.S. seniors with Internet access have shopped online, and 78% have made at least one online purchase.

HealthGate Data recently added the *Healthy Over 50* online magazine to its BeWell.com site. It found out the hard way, though, not to call 50s and 60s "seniors"; they don't consider themselves old. Targeting this demographic group will involve taking such preferences into consideration, but the increasing size of this market makes the potential payoff great.

### ***Opportunity: The Celebrityization of Health Care***

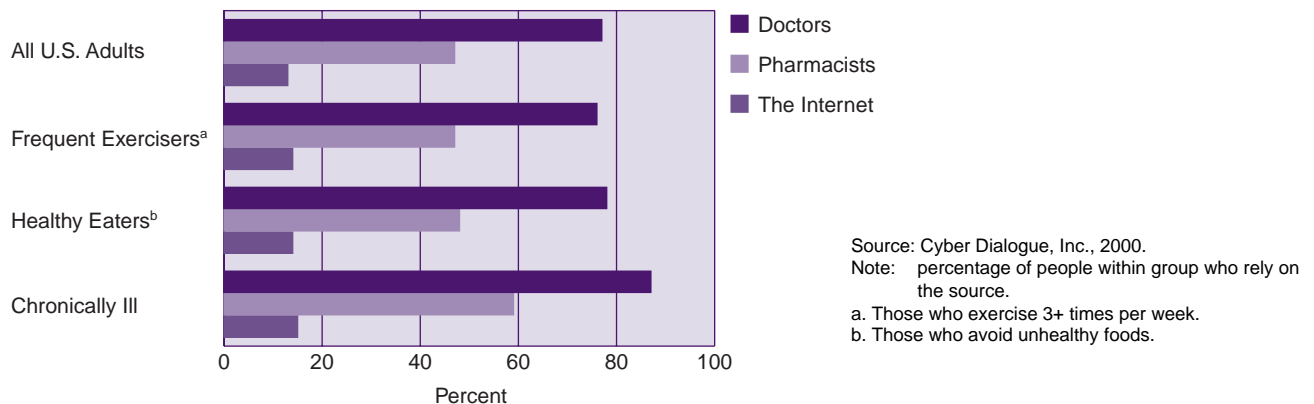
Half of the online population is 12 to 34 years old. Many health sites designed for this age group are building around celebrities. For example, the MTV health advice show "Loveline" and its Web site are built around celebrity physician Dr. Drew Pinsky (who may be the Dr. Koop of the MTV generation, though the kids who trust him and have been watching him for four years don't even know who Dr. Koop is). The site has a heavy component of mental health advice. For revenue, the audience is prime for many consumer brands and e-commerce deals on everything from pharmaceuticals to beauty aids.

**Opportunity: The Chronically Ill (But Watch Those Land Mines!)**

Without doubt, the Chronically Ill group forms a highly attractive online segment — but it also faces some pretty serious barriers. Chronically Ill online health consumers make up the most logical market for online personal medical records because they often have an array of symptoms and conditions that require tracking, frequently need to follow strict exercise regimens and diets, and take a number of prescription drugs. But the Chronically Ill are seriously concerned about privacy and medical record confidentiality. They value anonymity highly and find breaches of personal medical data threatening. In addition, concerns about privacy limit online buying. In line with other consumer segments, 48% of those with chronic conditions say that the Internet presents a serious threat to their personal privacy. Sixty percent of Chronically Ill online health consumers say it is too easy to steal credit card numbers used online.<sup>22</sup>

Among Chronically Ill online health consumers, satisfaction with Internet sources in comparison to other sources varies depending on the disease or condition. Hypertension, arthritis, and diabetes sufferers are relatively less satisfied with the Internet as a source compared to other sources. Those with allergies, migraines, and osteoporosis, on the other hand, are relatively more satisfied with the Internet than with other sources. More than other online users, Chronically Ill online health consumers trust their physicians. A whopping 87% consider doctors their preferred source of health information.<sup>23</sup> Pharmacists also rank higher among the Chronically Ill (at 59%) than among others (see Figure 7). This can be bad news for Web sites, because users often go online when they fail to find the information they need or want from their physician.

**Figure 7**  
*Sources Used for Health Information*



## Online Health Consumer Opportunities

Because Chronically Ill online health consumers trust their physicians and pharmacists so much, they may have little incentive to get online unless encouraged to do so by the doctor or pharmacist. A final barrier to prolific use by this category is the mixed quality of information available online. Very few efforts to standardize or even establish loose guidelines for online health and medical information have been successful. Those considered “a success” by Internet pundits don’t have much impact on consumer behavior one way or the other. The three factors that can overcome these barriers are the recommendation or creation of Web sites by physicians or pharmacists, convincing security technology that alleviates privacy concerns, and interest in alternative therapies.

### Community Opportunities

At its most basic, the Internet is a network of networks — thus a tool for connectivity. Within the consumer Internet space, AOL is the sleeping giant of connectivity. Because of its size, AOL is in fact a major health portal. AOL plans through its alliance with CareInsight to connect doctors and their patients through AOL.

**Table 8**  
*Patients Who e-Mail Physicians*  
(Percentage within group who e-mail their doctor)

All respondents	3
College Educated	4
Earn >\$75K/year	6

Source: Harris Interactive, 1999.

### **Opportunity: Linking Patients with (Willing) Physicians**

Doctors as a group are the last health care stakeholder to operate Web sites. Yet no other health care stakeholder has as intimate a relationship with the patient or as great an opportunity to influence the patient’s health and health economics. Connection is greater between patients and physicians than between patients and hospitals. More than 75% of people cite that doctors are their favorite source for health information. Web sites and e-mail could jump-start renewed relationships between patients and doctors.

Few people e-mail their doctors, however, because their doctors won’t (yet) give out their addresses to patients (see Table 8 and Figure 8).

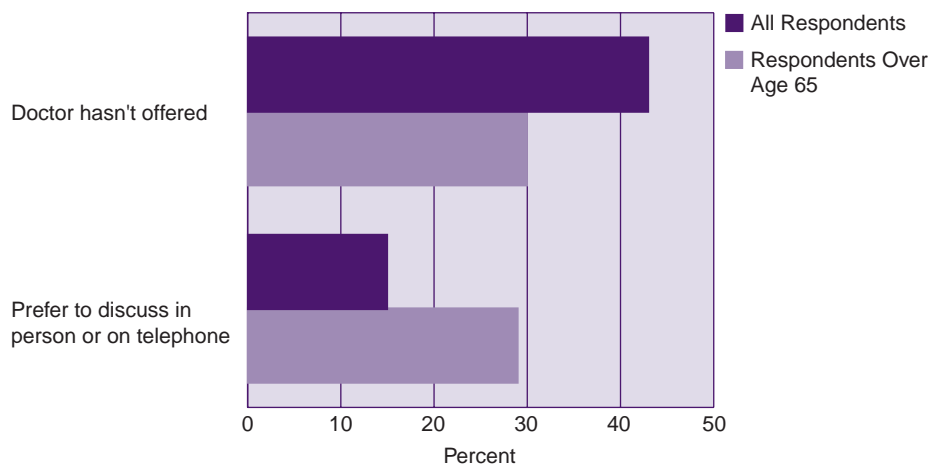
Most patients who search for health information on the Internet want to communicate via e-mail with their doctor’s office. This doesn’t mean that the patient needs a response directly from the physician; many patients are comfortable with responses to clinical questions from other professional office staff — in particular, from nurse practitioners. For insurance questions, the online health consumer would generally be comfortable receiving a response from an

office staff member. The important aspect about physician-patient e-mail is that patients want to receive a response within a reasonable period of time — in most cases, within 24 hours.

**Opportunity: Agents for Health Care Consumers**

Given the sheer breadth and volume of health information on the Internet, online health care agents have an important role to play. Online health care concierge services could assist patients with seeking the best price for health care goods and services, as Drug Information Technologies, Inc., does for online pharmacy information. In addition, health care concierges could assist with vetting clinical trials for patient volunteers, searching for elective surgery sites and surgeons, and assembling information on specific diseases that has been clinically screened for relevance and integrity.

**Figure 8**  
*Reasons Against e-Mailing Physicians*  
(Percentage within group with the given reason for not e-mailing)



Source: Harris Interactive, 1999.

**Opportunity: Wireless Connectivity**

Wireless Application Protocol (WAP) is becoming an important standard in health care, allowing information to be shared among health care providers, plans, pharmacies, and patients. With the proliferation of Personal Digital Assistants (PDAs, PalmPilots, and Visors), a growing number of clinical applications will provide efficient, simple communication between health care providers and patients for anytime/anywhere delivery.

**Opportunity: Ethnic Variations in Health Status and Behavior**

The Net-niche can provide a community where ethnic minorities can congregate, communicate, and gather information anonymously, without obstacles or discrimination. In addition to homing in on the differences in disease prevalence and compliance rates, targeted health sites have the potential to create a higher level of trust, customization, sensitivity, and community. Furthermore, ethnic minority Americans themselves perceive that online health information will become even more important over the next two years (see Table 9).

**Table 9**  
*Anticipated Importance of Online Health Information in 2002*

	<b>Total</b>	<b>Men</b>	<b>Women</b>	<b>Ethnic Minority</b>
More important	59.8%	64.5%	55.6%	68.7%
Less important	1.4%	2.1%	0.8%	2.3%
The same	38.8%	33.5%	43.6%	29.0%

Source: Cyber Dialogue, 2000.

Note: Respondents answered the question, "In the next two years, will online health information become more important?"

## Commerce Opportunities

Compared with travel, finance, and even the steel industry, health care has bloomed late in electronic commerce. Key obstacles have been consumers' concerns about the security of Web-based transactions and slow technology adoption in the health field. Innovations — such as security solutions, technical standards, and Internet Application Service Providers (ASPs) — are overcoming these obstacles, but even so, only about half of all consumers find compelling value in buying health-related products online. Key barriers to buying health products online include:

- Convenience and ease (most consumers still shop at bricks-and-mortar grocery stores)
- Difficulty in returning an unsatisfactory product
- Shipping costs
- Concerns with those handling prescriptions (trust and professional/ethical issues)
- Concerns about the quality of drugs ordered
- Slow product delivery

To win customers, online vendors must provide seamless convenience across products and services. This will require alignments with a broad range of consumer-demanded products and services — online *and* offline — something that might be called *holistic convenience*. The approach will require broad networks of open alliances that marry Old Economy and New Economy health care companies.

Just as men and women, income groups, and ethnic groups access health information differently, they also have different online shopping behaviors (see Table 10 on page 48). More women than men buy books, health, medicine, and cosmetics online. More men buy software, hardware, electronics, and travel online. Ethnic minorities buy more of everything online. In addition, health consumers tend to buy more of everything (especially health, medicine, and cosmetics) online than non-health consumers.

## Online Health Consumer Opportunities

**Table 10**  
Online Purchasing  
(Percentage of individuals in the group who have purchased the item online)

	Total	Health Consumers	Non-Health Consumers	Male	Female	Ethnic Minority	Income <\$50K	Income >\$50K
Books	62.9	68.4	59.8	62.6	73.6	68.5	61.5	75.3
Music	58.0	65.1	53.9	68.0	62.5	62.1	61.6	68.6
Software	57.5	64.2	53.6	70.2	58.9	71.1	60.7	67.8
Movies/videos	39.8	47.5	35.5	45.5	49.2	47.0	45.5	49.5
Clothing	36.7	45.7	31.6	45.6	45.8	37.0	38.2	53.3
Hardware	35.0	40.7	31.9	50.9	31.5	49.2	37.9	43.4
Travel/lodging	31.7	39.3	27.4	45.5	33.7	43.4	25.6	53.0
Con. electronics	30.2	36.4	26.7	49.0	25.1	44.6	29.7	43.0
Flowers, cards	23.8	31.2	19.7	30.5	31.8	32.3	24.0	38.3
<b>Health/med</b>	<b>19.6</b>	<b>36.9</b>	<b>9.9</b>	<b>31.2</b>	<b>42.0</b>	<b>35.8</b>	<b>33.3</b>	<b>40.5</b>
Food	19.4	26.4	15.5	24.9	27.7	26.1	24.6	28.1
Sporting goods	14.6	19.6	11.8	21.8	17.6	25.5	17.6	21.5
Cosmetics	14.0	23.6	8.7	12.7	33.2	23.4	22.1	25.0
Autos	1.5	2.4	1.0	3.4	1.6	2.4	2.3	2.6
Real estate	0.7	0.3	0.9	0.1	0.4	0.8	0.6	-0-
Other	13.7	12.9	14.1	7.8	17.5	6.7	9.0	16.8
Never	7.0	3.9	8.8	3.4	4.3	4.9	5.7	2.1

Source: Cyber Dialogue, 1999



### ***Opportunity: The Importance of Branding***

Initially, many companies foray online to build brand recognition. Online consumers tend to prefer specialized sites, according to Jupiter Communications. Furthermore, brands play an important role online. An offline brand that launches an online site is preferable to an online-only brand. Some pharmaceutical companies have recognized this trend and have responded with Web sites that, at a minimum, inform the public about their drug. When used to their fullest potential, these sites can achieve major strategic objectives, leading to drug initiation, improved compliance, and persistence — in essence, establishing and increasing brand loyalty. Currently, there are at least 52 branded pharmaceutical Web sites and about 20 nonbranded efforts.

Health care Web sites seek to change the behavior of visitors — that is, to motivate visitors to take desired actions. These desired actions include seeking treatment, asking for a brand by name, developing brand loyalty, and recommending the product to others.

### ***Opportunity: Prescriptions Online***

Physicians write approximately 2.5 billion prescriptions per year. Online pharmacies want to grab a share of these prescriptions at the source. Drugstore.com allows consumers to order prescriptions online and pick them up at a Rite-Aid pharmacy. Healthon/WebMD and its partners, Excite, Lycos, and MSN, have joined with CVS.com as its exclusive pharmacy. Online prescription retailers are battling fiercely to fill prescriptions online, while online stores with offline, bricks-and-mortar affiliations are often undercutting purely offline prices.

These savings, of course, are only of value to people who must pay some money out-of-pocket for their prescriptions. Savings are considered a strong incentive for senior citizens to fill their prescriptions online, for example, because Medicare does not cover prescription drugs and many senior citizens with limited incomes pay for their prescriptions themselves. (This would change under the creation of a Medicare prescription drug benefit that would enable large numbers of patient-enrollee-consumers to access drugs for a small copay through preferred online retailers.) People whose prescriptions are covered by health plans (85% of the insured population) pay the same amount online as they do offline. For the uninsured, the discounts may motivate them to buy online.

Online pharmacies are still in their early days, and a shakeout will occur soon among the 20+ pharmacy retailers now filling prescriptions and selling vitamins online. Each market sector has room for only two or three big players and a handful of specialty boutiques. Healthshop.com closed up its virtual shop in early April 2000. A few months after its 1999 launch, the site registered an average of 1 million visitors a month but visits slowed after a successful beginning. Warner-Lambert invested in the company in June 1999, and the company received an influx of \$25 million in venture capital in September 1999. It was supposed to launch its Alternative Practitioner Center in early April 2000 but shut down before this could happen.

In this early stage of online Rx-commerce, people shopping online with different chronic conditions seem to have different preferences. Of the Chronically Ill, 81% still prefer the local (bricks-and-mortar) pharmacy, and fully 9% use mail order.<sup>24</sup> Mail order is especially popular among those suffering from hypertension, thyroid disease, high cholesterol, diabetes, arthritis, or GI disorders. With the right value-added services and a real reason (e.g., financial) to switch, the Chronically Ill online health consumer could easily shift from mail order to online pharmacies.

Virtually all online pharmacies provide consumers with information on health, drug interactions, and various other topics. Some are adding online community chat rooms and even 24-hour online pharmacists who reply to questions with detailed health and medical information within an hour or within 24 hours.

### ***Opportunity: Pharmacy Benefits Management***

MIM Corporation, a pharmacy benefit management corporation (PBM), recently launched [www.MIMRx.com](http://www.MIMRx.com) to offer prescription drugs, OTC products, health and beauty aids, vitamins and nutritional supplements, and home medical supplies. It also will provide consumers with health information and the chance to ask questions of pharmacists. MIM is up against PlanetRx.com and drugstore.com, as well as other online drug stores.

This strategy of online PBM-pharmacy integration was also employed by PlanetRx.com, which bought the online unit of PBM Express Scripts, with 36 million members. Now Express Scripts members can buy prescriptions at PlanetRx with their customary Express Scripts copayments. In return for making

the Web drugstore its exclusive online pharmacy, Express Scripts garnered a 19.9% ownership stake in PlanetRx, as well as fees in excess of \$11 million annually. Meanwhile, PlanetRx is free to pursue similar business deals with other companies that manage pharmacy benefits.

### ***Opportunity: The e-Pharmacy Niche***

Trust is a major impediment to purchasing online and sharing personal information for many health care consumers. Hence, an opportunity exists to provide a trusted, secure online pharmacy targeted to specific groups. GayPharmacy.com, launched in early 2000 and touted as the first Internet pharmacy exclusively targeting gays and lesbians, for example, offers more than 30,000 health care products, a secure shopping environment, and competitive prices. GayPharmacy.com's founder also co-founded the HomePharmacy.com site, which plans to launch sites catering to health care needs of older people, students, and babies.

### ***Opportunity: Getting into the Transportation Business***

According to a survey conducted in August 1999 by PC Data Online, bricks-and-mortar pharmacies could potentially drive traffic to their Web sites by offering delivery services. More than two-thirds of respondents said they would be interested in online pharmacy services if their current drugstore would allow them to purchase and fill their prescriptions online and then deliver the prescriptions to them. Some pharmacies have responded to this demand for convenience, and CVS already is offering this service on its site.

### ***Opportunity: Going Mobile***

As the Internet moves beyond the personal computer to many Internet-enabled devices, shopping via PDA will grow. Though primarily aimed at physicians for electronic prescribing, the proliferation of new wireless applications spotted at the year 2000 Health Information Management Systems Society annual conference was staggering. PlanetRx.com, the top-ranked online pharmacy, is developing an online PDA interface for consumers, and scanning technology for automatic replenishment of the medicine cabinet is in development.

### ***Opportunity: Morphing the Online Drugstore into Disease Manager***

MediQuik Services Inc. plans to launch an online drugstore and disease management subsidiary targeting chronic care patients. The site at [www.chronicRx.com](http://www.chronicRx.com) will include disease management tools to help patients comply with individual chronic disease care regimens. The drugstore will be a full-service mail-order pharmacy, offering prescription and OTC medications, medical supplies, and vitamins.

### ***Opportunity: Online Health Insurance and Financing***

As savvy online health consumers transact stock trades and strike deals for groceries online, some will also become more comfortable transacting health *business* online — in particular, shopping for and purchasing health insurance. Small businesses and independent contractors in particular have been left out of the health insurance loop — and have been unable to access the well-priced policies available to larger groups. The Internet brings the opportunity to provide these buyers with report cards on plans (comparing benefits and rates), risk pooling, referrals and claims management, online payment, and other critical insurance functions. HealthAxis.com was among the first entrants in this space.

### ***Opportunity: Health Insurance eBay***

A particularly successful type of Internet marketplace is the auction, where online consumers bid for products; eBay is one of the few strictly online auction Web sites that generate profits. The growth of Priceline.com, from its early days as travel marketplace to its later auto and grocery sales, is another example of the consumer-to-business auction phenomenon. Now the auction concept has emerged in health insurance, with companies such as OurHealthPlan.com. In this method of providing health insurance directly to consumers, the consumer suggests a price for a product or service and the business accepts or rejects the offer. Should employers shift from defined benefits to defined contribution and put more purchasing power in the hands of employees, the online health insurance market will open up to consumers.

### ***Opportunity: Health Care Financing Agent***

Given the patchwork quilt that is health care financing in the United States, an opportunity exists for an intermediary to assist consumers by closely reviewing medical bills. This is the space filled by HealthAllies.com. Although the typical hospital bill contains complicated medical terminology and hundreds of line items, bill reviewers at HealthAllies.com can spot coding errors as well as potentially fraudulent charges. The company's business model is intriguing in that it is "value priced" to the consumer — the company charges only when it saves the consumer money and then takes one-third of the savings. The growing number of patients paying more out-of-pocket costs is a key driver for this opportunity.

### ***Opportunity: Health Care Lawyers Online***

Bringing the phrase "from cradle to grave" full circle, the Living Will Network is the first online site where consumers can write and store their living wills. The site is the legal repository for consumers who wish to keep their living wills for health care orders, durable medical powers of attorney, and information on organ and tissue donation online and available to health care providers. For consumers who want to retain control of such documents, an online health law repository could be an attractive alternative to working with a lawyer.

## **Care Opportunities**

### ***Opportunity: Disease Management and Monitoring – Consumer, Heal Thyself***

About 6% of Chronically Ill consumers currently use some type of computer software to help track or manage their family's health. Of all patients with chronic conditions, those with diabetes currently use software for disease management the most (13%). Fully 64% of Chronically Ill health consumers would find disease management computer software helpful for managing their conditions.<sup>25</sup> In addition to diabetics, individuals with depression, migraine, arthritis, cholesterol, back problems, and GI disorders have the most pent-up demand for disease management software.

**Opportunity: Disease Management for Women’s Health**

Clearly, men and women use the Internet differently to search for health information and get support online. Women’s health issues (menopause and gynecological problems) top the list of topics searched (see Table 11). Furthermore, those with gynecological problems are much less likely than the average consumer to be under the care of a physician and taking a prescription medication (only 16% take a prescription drug, and only 31% are under the care of a physician). Hence, the Internet can (and to some extent, has) become a key adjunct for self-care for women.

**Table 11**  
*Frequency of Online Health Searches by the Chronically Ill*

Rank	Condition	Often or Sometimes	Never or Hardly Ever
1	Menopause	75%	25%
2	Gynecological	73%	27%
3	Sinusitis	72%	28%
4	Migraine	71%	29%
4	Arthritis	71%	29%
5	Thyroid	70%	30%
6	Depression	69%	31%
7	Diabetes	68%	32%
7	Back problems	68%	32%
8	GI disorders	67%	33%
9	Hypertension	66%	34%
9	Cholesterol	66%	34%
10	Skin condition	65%	35%
11	Seasonal allergies	64%	36%
12	Asthma	61%	39%

Source: Harris Interactive, 1999

Note: Respondents answered the question, “How often do you look for information online about health topics?” Percentage represents those who checked the given answer.

### ***Opportunity: Supporting Compliance***

Noncompliance among patients is rampant but varies dramatically by disease state. While 90% of the Chronically Ill use prescription drugs, only 43% of the Chronically Ill have taken them properly as prescribed by their doctor over the past year. Those with diabetes (50%) and hypertension (49%) report the highest levels of compliance, while those with back problems (36%), asthma (34%), depression (28%), and migraine (28%) more rarely take their drugs as prescribed.<sup>26</sup>

The Internet appears to have a significant impact on compliance. According to Harris Interactive's *10,000 Patients Survey*, nearly two-thirds of diabetics believe that information retrieved from the Internet has some impact on their compliance with treatments for managing their illness.<sup>27</sup> For virtually every major chronic disease category, more than half of Chronically Ill patients believe that information gleaned from the Internet has at least a minor impact on their compliance.

### ***Opportunity: e-Consults and e-House Calls***

Savvy online health consumers of all categories have begun to use the Internet as a marketplace for second opinions, clicking onto AmericasDoctor.com and Doctorquality.com. Newly Diagnosed consumers and the frustrated Chronically Ill are especially motivated online searchers. They learn of specialties, treatments, and procedures that may not be available or performed in their home town. Healthdialog offers employers subscription Web-based services with access to nurse coaches who can help consumers decide whether to risk a surgical procedure as opposed to pharmaceutical treatment. Most activity to date has been in super-specialties (e.g., rare cancers or multiple sclerosis) and for the Chronically Ill. This activity is challenging the traditional doctor-patient relationship, which is morphing from the bedside to the Web site.

### ***Opportunity: The Internet as an Island of "Dot-Calm"***

Twenty-two percent of online health consumers have looked for mental health information online. The area is unregulated, however, and no licensing requirements currently exist: Anyone, regardless of qualifications, can set up a Web site and charge for advice. That makes many professionals nervous. Only 162 practitioners of Web counseling are listed at [www.metanoia.org/imhs](http://www.metanoia.org/imhs) (a Web site to "compare over 160 online counseling Web sites by price and services"). By contrast, there are more than 28,000 credentialed counselors in the United States.

The benefits of online mental health care, variously known as e-therapy and Web counseling, have not been well studied, and little research has been done on its effectiveness. For many, though, the anonymity and privacy of searching for mental health information has some appeal. The method appears to be gaining acceptance, particularly to help individuals screen themselves for alcoholism, depression, attention deficit disorder (ADD), and anxiety disorders.

Related to Web counseling, an opportunity exists to use Internet technologies to help people suffering from depression become more compliant. Only 28% of Chronically Ill people diagnosed with depression say that they have been totally compliant with treatment regimens.<sup>28</sup>

### ***Opportunity: Health and Insurance for the Globetrotter***

Given the increasingly and globally mobile culture, online consumers are demanding travel health advice and insurance. Learning about infectious disease outbreaks, vaccination requirements, and airline smoking policies abroad is useful for the health-concerned road warrior. (The downside of this type of research is that the information could convince some would-be travelers to stay home!) Two useful sites in this space are Highwaytohealth.com and MedicinePlanet, which offer a wide range of health information for travelers. Ericsson, a telecommunications company, is building its “M Commerce” strategy (where “M” stands for “mobile”), which includes a mobile health care service called Medicine Planet (unrelated to the previously mentioned Web site). The service will be piloted at the 2000 Australia Olympics for out-of-town visitors.

### ***Opportunity: Internet-Delivered Diagnostics***

An example of real life imitating art, Lifeshirt.com has begun to market its sensor-packed T-shirt. The shirt monitors 40 health indications (from blood flow to the chest to respiratory rate), which are downloaded into a PDA module, uploaded to the Web site Lifeshirt.com, and communicated to a physician. The Internet can be the conduit for other kinds of diagnostic communications and analyses as well, from heart to prenatal monitoring. Well online health consumers concerned about managing their health are a prime market segment for online diagnostics.

The era of the human genome is at hand. A market will exist for communicating genetic information between consumers and genetic scientists. Two companies



— Kiva Genetics (funded by Jim Clark of Healthcon and Netscape) and Orchard Biosciences — are providing direct-to-consumer information about their own genetic information. Consumers provide raw material (e.g., a swab from the tongue) to the companies, and analysts return health information to the consumers (e.g., what medications would be most suitable for the consumer given a particular single nucleotide protein derived from the consumer's genetic sample).

### ***Opportunity: Clinical Trials Online***

Currently, only 3% of patients eligible for clinical trials are participating in them. Yet every day, hundreds of patients hear the phrase “There’s nothing we can do” delivered by a physician. Clinical trials can give patients access to the latest medical treatments. Finding out what trials are in process and if they are appropriate for a particular patient often takes a lot of research, however. The Internet provides a cost-efficient medium for educating patients about what trials are and the value of participating in them as well as a medium for administration of the trials.

CenterWatch.com, the National Institute of Health’s listing of more than 41,000 government- and industry-sponsored trials, is dedicated to assisting patients and their advocates learn about and identify ongoing clinical trials seeking study volunteers. Intermediaries could assist patients in identifying the most appropriate trial for the individual.

### ***Opportunity: Personal Medical Records***

Nothing is more personal than a Personal Medical Record (PMR). The PMR is an online medical record generally built by the patient, periodically updated by the patient, and used by the patient for health and disease management. What drives consumers to the PMR is demand for control and shared decision making with physicians. Many PMR Web sites also offer daily support for medication reminders, community and peer interaction, and Web site storage space for paper records that can be scanned onto the Internet. This is particularly important for the mobile Chronically Ill.



## *Forecast: Health and Health Care Products and Services Online*

In the next five years, online health-related products and services will develop in two stages. The first stage, between now and the end of 2002, will follow a shakeout by business category that will leave only a few survivors in each e-health niche; this near-term stage will be market driven, with only those players able to show a return on investment continuing to receive substantial venture capital support. A longer-term and more significant shift will occur from 2003 through 2005 as increasing numbers of companies see the advantage of an online platform for business. The accumulation of a critical mass of health care data and agreement on information standards will lead to this stage.

### **Short Term: 2000 Through 2002**

To succeed online in the immediate future, organizations will need to differentiate themselves and prove unique value, in both online *and* offline contexts, to either consumers or other health care stakeholders such as payers or providers. Successful organizations will target the demographic or cultural niche they may best serve. As the need arises, Well online health consumers will do business with e-health companies and organizations that offer specialty products and/or discounts. They will become loyal only to brands that provide convenience and quality to them during their episodic encounters with the health care system. The group of consumers most likely to return to e-health sites frequently will be the Chronically Ill and their caregivers. Serving this group well will be the key to success for many e-health initiatives.

In a market-driven e-health environment, advertising and a push to purchase will dominate the consumer experience. Using the Internet as a communications tool, comprehensive disease management will start with conditions that require a great deal of patient education, self-care, and monitoring, such as diabetes. Some companies that foray into providing disease management care will progress across disease states as well as across the care process.

## Forecast

In the next couple of years, e-health consumers will also experience increased involvement in what have historically been strictly business-to-business transactions— for example, consumers online will work with pharmacy benefits managers to purchase prescription pharmaceuticals, search for clinical trial information, and obtain health insurance benefits and eligibility information. Administering the business of health care will move online, where appropriate, and the Web browser will link disparate databases and eventually will link consumers to their health care information and bills.

### ***Health-Related Online Products and Services Likely in 2000 through 2002***

- Targeted marketing by niche: women, seniors, and ethnic minority groups
- Targeted marketing by health status, with particular attention to the Chronically Ill and their caregivers
- A proliferation of wireless Internet appliances for health purposes, such as biometric monitoring
- Hybrid (online and offline) brand development
- Online pharmacy benefits management and prescription refills
- Disease management initiatives
- Online clinical trials administration and relevant data available to consumers

### **Long Term: 2003 Through 2005**

The second stage of growth in online health care will happen as the majority of health care stakeholders shift to using the Internet for the business of health care. For this to happen, a critical mass in each sector will go beyond using the Internet for marketing and public education to using it for purposes such as linking and integrating fragmented data sources. For increasing numbers of processes, doing business exclusively online will become easier and more cost-efficient. Consumers will perceive the better data that results as more complete and readily available and will realize a higher level of customer service. With increased integration of data, outcomes measurement and quality will improve during this later forecast period.

As health care organizations continue to use the Internet for business-to-business transactions, the supply-driven online health care market will transform itself to meet consumer demands. Just as banks encouraged their customers to use efficient, cost-effective automated teller machines (ATMs) by offering discounts and highlighting the convenience and control of such services, health care organizations will recognize the efficiencies of collecting data and administering health care online.

### ***Health-Related Online Products and Services Likely in 2003 through 2005***

- Links between patients and providers: physicians, nonphysician clinicians, hospitals, and other health-related services
- A proliferation of health care information brokers for consumers who control their own health spending
- Increased monitoring of patients via Internet-enabled sensors and home diagnostics
- Disease management monitoring and treatment compliance that improve quality and health outcomes for a significant proportion of enrolled patients

### ***Wild Card***

A wild card that could markedly increase demand for better information sooner is a large shift from defined-benefit to defined-contribution insurance, with employers stepping out of the role of health insurance broker and shifting the onus of designing and selecting health insurance packages to their employees. In a defined-contribution environment, consumer demand for information and services would create market opportunities for health care information and service brokers. The question remains whether employers are unlikely to make such a bold move in such a strong economy without a significant change in regulation.

## Endnotes

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- <sup>5</sup> Cyber Dialogue, Inc., 1999.
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- <sup>8</sup> The Henry J. Kaiser Family Foundation, National Public Radio, Kennedy School, Harvard University. "Survey Shows Widespread Enthusiasm for High Technology." The Henry J. Kaiser Family Foundation Press Release (February 29, 2000). Web site <http://www.kff.org/content/2000/20000228a/Summary.PDF>.
- <sup>9</sup> Hobbes' Internet Timeline. Web site <http://info.isoc.org/guest/zakon/Internet/History/HIT.html>.
- <sup>10</sup> Cyber Dialogue, Inc., 1999.
- <sup>11</sup> The Henry J. Kaiser Family Foundation, *Racial and Ethnic Disparities in Access to Health Insurance and Health Care*. UCLA Center for Health Policy Research and The Henry J. Kaiser Family Foundation, Menlo Park, CA.
- <sup>12</sup> Harris Interactive. *The 10,000 Patients Survey*. Harris Interactive, 1999. New York, NY.

- <sup>13</sup> Cyber Dialogue, Inc., 1999.
- <sup>14</sup> Cyber Dialogue, Inc., 1999.
- <sup>15</sup> This number approximates the percentage of people with a common chronic disease (asthma, HIV, hepatitis, diabetes, or cancer) relative to the total online health consumer population.
- <sup>16</sup> Cyber Dialogue, Inc., 1999.
- <sup>17</sup> Cyber Dialogue, Inc., 1999.
- <sup>18</sup> This 16% of total online health consumers is part of the 35% considered “Chronically Ill and their caregivers.”
- <sup>19</sup> Cyber Dialogue, Inc., 1999.
- <sup>20</sup> Cyber Dialogue, Inc., 1999.
- <sup>21</sup> MediaMetrix, 1999.
- <sup>22</sup> Cyber Dialogue, Inc., 1999.
- <sup>23</sup> Cyber Dialogue, Inc. *Ethics Survey of Consumer Attitudes about Health Web Sites*. California HealthCare Foundation and Internet Healthcare Coalition, 2000, Oakland, CA.
- <sup>24</sup> Harris Interactive, 1999.
- <sup>25</sup> Harris Interactive, 1999.
- <sup>26</sup> Harris Interactive, 1999.
- <sup>27</sup> Harris Interactive, 1999.
- <sup>28</sup> Harris Interactive, 1999.



# Internet Health

## Drivers

**ALL**

- New Consumers seeking information and convenience
- Direct-to-Consumer advertising
- Promotions, discounts and coupons
- Media and Internet buzz
- Globalization

## WELL

- Health media coverage
- Wellness movement
- Aging Baby Boomers
- Daily use for business and e-mail
- Coupon shoppers and discriminating shoppers
- Caring for family members
- Sensitive issues (disease information and products, e.g. ED and Depends)

## Care



## Commerce



## Community



## Content



## Barriers

**CONCERNED CONSUMERS**  
— People who pay attention to health and seek information  
(e.g. women: caregivers, family health decision-maker)



Perceived Health Continuum



**CAREFREE CONSUMERS**  
— People who don't care or don't pay attention to their health



- Online benefits and appointment scheduling
- Health risk assessments, personal medical records
- Patient-provider e-mail



- Bulk buying
- Health and beauty aids
- Alternative medicine, herbals, nutraceuticals
- Black Market shopping
- Prevention and employee assistance programs



- More chat about lifestyle issues than health
- Caregivers chat about the chronically ill

Seminal health event



- Sporadic use, varying in intensity
- Search for wellness, prevention, anti-aging, provider information

start here ↑

- Privacy concerns
- Digital Divide
- Need for "high touch" in health

- Episodic nature of health care and lack of interest
- Information overload
- Fickle consumers



# Care Consumers

## CHRONICALLY ILL & THEIR CAREGIVERS

### NEWLY DIAGNOSED

More, easily accessible information online  
 24 hour access to info  
 Global access to experts  
 Clinical research available online

Desire for anonymity  
 Caregivers seek support and information  
 Stigma of disease  
 Sensors proliferation  
 Disease management

Increasing number of prescriptions among younger and younger generations  
 Alternative medicine information  
 Loyalty to trusted sites

Global M.D. consults and second opinion  
 New patient education

M.D. consults and oversight  
 Monitoring (sensors)  
 Clinical trials — research  
 "Virtual high touch"

Many caregivers cast a wide net

Few caregivers for the chronically ill

Help!  
 Frantic call for help and advice  
 Search for providers and treatment information

Mail order prescription refills and discounts  
 Hard-to-find items  
 Alternative medicine, including shark cartilage  
 Black Market shopping

Anonymity enjoyed by users  
 Online support groups  
 Caregivers chat for support  
 Patient advocacy groups

Need for specific information  
 Casting a wide net for sources

Frequent use  
 Search beyond the traditional health care providers

start here. ↗

start here. ↗

Unclear quality of information and misinformation  
 Transient population

Privacy and medical record confidentiality  
 High trust in physician or pharmacist  
 Mixed quality of information