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European Physicians and the Internet

The Boston Consulting Group

ALASTAIR FLANAGAN
PHILIPPE GUY
STEFAN LARSSON
CAMILLE SAUSSOIS

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About the Authors

Alastair Flanagan is a vice president and director in the London office of The Boston Consulting Group. Philippe Guy is a senior vice president and director in the firm’s Paris office and head of the global Health Care practice. Stefan Larsson is a manager in BCG’s Stockholm office. Camille Saussois is a manager in BCG’s Paris office.

Acknowledgments

The authors would like to thank Andreas Poensgen, head of BCG’s efforts in Germany, Austria, and Greece, and Carina von Knoop, head of the firm’s E-Health topic area. They would also like to acknowledge the contributions of the project team: Jacob Calmvik, Mary DeVience, Marc Durance, Yasmina Langevin, Bent Lüngen, Eddy Schmitt, Patrik Schulz-Vanheyden, Balazs Szathmary, and Lars Textorius. Finally, the authors would like to thank the editorial team of Barry Adler, Katherine Andrews, Patricia Berrian, and Nancy Graham.

For Further Contact

BCG welcomes your questions and feedback. For information about this report or BCG’s Health Care practice, please contact:

Alastair Flanagan
BCG London
Telephone: 44 207 753 5353
Fax: 44 207 753 5750
E-mail: flanagan.alastair@bcg.com

Andreas Poensgen
BCG Hamburg
Telephone: 49 40 30 99 60
Fax: 49 40 33 79 45
E-mail: poensgen.andreas@bcg.com

Philippe Guy
BCG Paris
Telephone: 33 1 40 17 10 10
Fax: 33 1 40 17 10 15
E-mail: guy.philippe@bcg.com

Camille Saussois
BCG Paris
Telephone: 33 1 40 17 10 10
Fax: 33 1 40 17 10 15
E-mail: saussois.camille@bcg.com

Stefan Larsson
BCG Stockholm
Telephone: 46 8 402 44 00
Fax: 46 8 402 46 00
E-mail: larsson.stefan@bcg.com
Executive Summary

The potential for using online tools to gather medical information and deliver patient care was just being recognized when we surveyed the European landscape for our 2001 report, Patients, Physicians, and the Internet: Myth, Reality, and Implications. Our latest study, conducted in 2002, shows that as the constraints on physicians’ costs, time, and practices have tightened, many doctors in France, Germany, and Sweden have embraced e-health for its promised gains in efficiency and improved patient care. This study also reveals that the medical information and the tools that doctors are finding in the virtual world are having an impact on their real-world medical decisions in significant ways.

E-health is gaining acceptance among more and more physicians, and it is having a greater impact on their practice of medicine. Most physicians in Europe are now online. Sweden leads the nations we surveyed with 74 percent of its doctors online; in Germany and France, 64 percent and 55 percent of physicians, respectively, use the Internet. Nearly all of the physicians who are now online (96 percent) reported using Internet technologies for professional reasons, with many spending a significant percentage of their time online for that purpose. In addition, a vast majority of European physicians online claimed that the information they find there has an impact on their professional knowledge, diagnoses, and prescription writing. Overall, the Internet represents a large and growing opportunity for health care players seeking to reach and influence busy physicians.

Doctors are using the Internet in more sophisticated ways to acquire knowledge. To save time and become more productive, the vast majority of physicians (84 percent) have already shifted a portion of their clinical queries online, and many are hungry for more sophisticated offerings, such as Web-based medical courses and seminars. Furthermore, about one-third to one-half of the European physicians we surveyed reported that they welcome the Internet as a complementary channel to visits from drug reps. The doctors apparently believe that acquiring drug information online will maximize their knowledge about new treatments while minimizing their time away from patient consultations.

In the hope of using consultation time with maximum efficiency, doctors are enthusiastic about referring patients to high-quality Web sites that allow them to learn more about conditions and treatments after they leave the doctor’s office. Physicians view the sites as a way to strengthen their bonds with patients and exert more control over the health information patients view on the Web.

Physicians are embracing e-health tools to improve the care they deliver to patients. Roughly two-thirds of European doctors are now using electronic medical records, whereas about one-third have adopted electronic prescribing systems. These doctors have turned to the technologies largely for the gains in efficiency they provide. But they are just beginning to tap the potential of the tools when it comes to improving patient care. For example, doctors can use e-health tools to screen prescribed treatments for compliance with the latest formulary restrictions as well as for possible drug interactions. In addition, the tools can help physicians instantly exchange the most comprehensive and up-to-date patient data between colleagues and facilities.

Because of the enhanced interaction that these tools afford, the Internet will facilitate disease management networks—groups of medical professionals focused on developing standards of care in a therapeutic area by improving coordination among the...
various health-care and social-service constituents responsible for delivering that care. Already, about 20 percent of European doctors are communicating directly with patients online in order to ensure follow-up and provide more comprehensive treatment. Such initiatives to coordinate and manage care are bound to gain in popularity in the coming years—with emerging remote-disease-monitoring tools fueling the initiatives’ growth. Early adopters report that the tools perform, and they prevent costly invasive or emergency care. Left to be resolved, of course, are many questions about the financing of these initiatives and the standardization and development of these technologies. Nevertheless, initial analyses demonstrate that such tools yield financial benefits for payers while significantly improving the quality of patient care.

E-health offers health care players a critical opportunity to inform and influence physicians—and a powerful way to redefine the economics of their business. By electronically enabling the core processes in their industry—communicating with physicians, capturing and sharing patient data, and managing diseases and care—health care players are finding ways to reach more doctors, ensure better care, and reduce costs. It is not surprising, then, that during the e-frenzy, many players—technology and health care companies alike—pursued the e-health space that serves physicians. Finding the right business model in the online environment, however, has proved to be a difficult task. Clearly, the type of online services or features that a health care player offers should vary according to the industry subsector in which it plays, the customers and activities it targets, and its place in the health care value chain. Over the last two years, distinct strategic opportunities have begun to emerge.

For pharmaceutical companies, which are increasingly pressed to differentiate themselves in sales and marketing, e-health provides enhanced, lower-cost access to physicians as well as many new opportunities to influence payers and patients. For payers, e-health is emerging as an important tool for containing health care costs. E-prescribing can boost doctors’ compliance with formularies and help reduce spending on drugs. Similarly, Web-enabled disease management can improve care and cut costs for chronic patients. For Europe’s resource-constrained providers, e-health supports improved operational efficiency and provides an opportunity for increasing revenues by allowing hospitals and other providers to exploit the medical expertise and wealth of clinical data they possess.
Introduction

In 1999, The Boston Consulting Group began regularly checking the pulse of e-health in Europe and the United States, measuring the penetration and impact of online medical information and tools among physicians and patients. The current report reveals that European doctors are using e-health more frequently, in more sophisticated ways, and with more of an impact on their practice of medicine.

This report paints a far different picture from the one we drew in January 2001, when we published our last report on the state of e-health in Europe, Patients, Physicians, and the Internet: Myth, Reality, and Implications. Back then, the e-bubble had expanded to capacity and was about to burst. Since the shakeout, many organizations throughout the European health-care industry have abandoned their investments in the online channel. Some were disillusioned by the Internet and happy to return to business as usual. Others, suspecting that e-health still held some promise (although uncertain about its precise value and how it could be optimized), stayed in the game but scaled back projects targeting online dissemination of medical research, drug information, and patient data.

Although both reactions seemed to make sense, the current report reveals that they haven’t for the most part reflected the realities of the market. In fact, physicians have moved online at high rates. They are using e-health not only as a source of information but also as a medium for communication and a platform for new tools that support clinical practice.

Our findings are based on interviews with more than 600 physicians in three European countries. Conducted during 2002, the study highlights the online behavior of physicians in France, Germany, and Sweden, and explores the impact of such behavior on the practice of medicine. We focused on France and Germany because they constitute the two largest markets for health care in Europe. We selected Sweden because it leads Europe in terms of online penetration among physicians. (For a more complete discussion of our survey’s focus, see Methodology, page 30.)

Busy Physicians Seek Medical Information, Efficiency, and Improved Patient Care Online

Under strong pressure to limit growing health-care costs, physicians today are increasingly burdened by government restrictions on budgets and reimbursement as well as by payer-mandated practice requirements. In such an environment, doctors must find ways to fit more patient consultations and paperwork into their busy workdays.

In France, for example, where the government closely regulates the fees doctors are allowed to charge, data from the French Committee for Health Education revealed that in 2000 general practitioners had to consult with an average of 22 patients a day in order to cover the expenses associated with operating a medical practice. In the face of tightening restrictions, that number has probably already risen to 24.

Confronted by these constraints, physicians find themselves not just with less consultation time per patient but also with less time to read journals, complete continuing-medical-education (CME) courses, undertake research, attend conferences and symposia, and meet with drug representatives on detailing visits—all critical steps if they are to keep their medical knowledge up-to-date. The pressure is becoming particularly intense given the growth in the number of new products, treatment
options, and practice guidelines that are released each year.

To help alleviate these mounting pressures, European doctors are embracing the Internet as a safety valve of sorts—seeking the improved access to information, efficiency gains, and patient-care enhancements that its connectivity affords. In fact, despite the retreat by health care organizations, the enthusiasm of doctors and patients alike has caused e-health to progress faster and farther in Europe than was originally forecast.

The real value of e-health lies not merely in the fact that it makes traditional data available in new ways; it also changes the way doctors use that information in their clinical practice. These results echo the findings reported in our companion study, Vital Signs: E-Health in the United States.

For example, European physicians reported that e-health helps them enhance their professional development through online tools for building and sharing knowledge. It also helps doctors improve their relationships with patients by providing tools that foster communication and deliver customized, interactive materials for explaining conditions and treatments. Furthermore, Internet-based technologies that support diagnosing, monitoring, and delivering care also improve efficiency. These so-called remote-disease-monitoring (RDM) technologies, when combined with the connectivity that the Internet builds among providers, will enable disease management networks—groups of medical experts who devise and implement standards of care for particular conditions—to achieve even better clinical outcomes.

Patients Fuel the Rise in E-Health

Laws in most European countries limit consumers’ ability to use the Internet to get information about specific drugs. Nevertheless, the demand for general medical information is growing: almost half of European physicians report that their patients have asked about treatments they’ve learned about online. Indeed, it appears that European consumers are following in the footsteps of their U.S. counterparts, who are becoming increasingly involved in their own medical care as a result of improved access to health-related information. In our study of more than 10,000 patients in the United States, we found that about 80 percent seek medical information online and that about 75 percent of the patients online report that e-health has changed the way they communicate with their doctor. Patients in the United States—and increasingly in Europe—are beginning to view physicians as decision-making partners and expert guides rather than as the sole gatekeepers of medical information or the unquestioned dispensers of health treatments and advice.

Our survey provides solid evidence that e-health—although hardly a panacea for all that ails the health care industry—is not a passing fad among physicians in Europe. The doctors who have added e-health to their medical kit told us that they like it and that it has an impact on their decisions about patient care. Thus, the Internet provides pharmaceutical companies, payers, health care providers, and other health-care organizations with a golden opportunity for educating and influencing physicians: the most integral and influential players in the prescription of drugs and the delivery of care.
E-Health Is Gaining Acceptance and Influencing Clinical Practice

The barriers that initially impeded doctors’ use of e-health are disappearing. Our 2001 report found, for example, that European physicians, although eager to use the Internet, were not moving online because they were concerned about the time and resources required to adopt the new medium.

It seems that those concerns have dissipated: a large majority of doctors, both specialists and generalists, are now online and dedicating significant time to the medium for professional purposes. Most important, the knowledge they gain online influences their clinical behavior.

Professional Use of the Internet Is Increasing

Among the three countries surveyed, more than half of physicians are now using the Internet: 74 percent in Sweden, 64 percent in Germany, and 55 percent in France. (See Exhibit 1.) This penetration has increased sharply over the past few years; in Germany, for example, only 47 percent of physicians were using the Internet in 2000, according to a study conducted by the German market research group NFO Infratest.

Although it is growing steadily, Internet penetration among physicians in Europe still lags the U.S. rate, where 96 percent of physicians are online. If recent European e-health trends continue, however, the gap will narrow significantly: we expect physicians in Sweden to catch up to their U.S. counterparts by the end of 2003, and we predict that about 90 percent of physicians in France and Germany will be online by 2005. Not surprisingly, the rate of Internet adoption among younger physicians (defined in our study as those under 40 years old) is 20 percent higher than the rate among the physician population overall.

Once online, physicians reported that they use the Internet for professional reasons—with 75 percent spending a minimum of 30 minutes per week exploring medical issues on the Internet. These more active users of the Internet spend an average of about 60 percent of their online time, or about three hours per week, addressing professional issues—for example, e-mailing colleagues, searching and reading online journals, and completing CME coursework.

The vast majority of European physicians seek medical information online when they are not at work. Eighty-six percent log on after work and 71 percent do so on weekends, compared with 46 percent go-

EXHIBIT 1
MOST PHYSICIANS ARE NOW ONLINE

<table>
<thead>
<tr>
<th>Percentage of doctors surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
</tr>
<tr>
<td>64</td>
</tr>
</tbody>
</table>

Note: The number of respondents was 254 in Germany, 251 in France, and 101 in Sweden.
ing online between patient consultations and just 16 percent doing so during consultations. (See Exhibit 2.) Overall, European physicians tend to spend about half of their professional time online at home. This finding suggests that much of the online time doctors dedicate to medical issues is also time when they are undistracted by office business and are otherwise inaccessible to health care players. Note, however, that the amount of time that doctors use the Internet from home for professional reasons varies considerably by country: German physicians spend 65 percent of their professional time online at home, French physicians spend 45 percent, and Swedish physicians spend just 25 percent.

Physicians Seek Credible Web Sites for Clinical Information

No matter where they are when they log on—in their homes or at the office—the vast majority of doctors online (84 percent) use the Internet to seek clinical information. Not surprisingly, they look for reliable sources. In comparison with their U.S. counterparts, European physicians seem to be particularly sensitive to the potential commercial bias associated with Web sites or content sponsored by corporations or payers. This sensitiv-

As a result, the physicians we surveyed are usually drawn to objective, third-party sites—such as those sponsored by universities, medical centers, and medical associations—as well as to health portals, which offer a point of entry to materials on a broad range of diseases and treatments. Nearly 60 percent of physicians tend to start their research through independent search engines such as Medline—a database of academic journals—largely because many doctors are suspicious of online medical content that is not academically reviewed in the way that medical journal articles are.

A doctor’s online destination is also determined by the type of medicine he or she practices. General practitioners visit primarily nonspecialized health portals, such as egora.fr and multimedica.de. By contrast, specialists prefer Web sites that focus on particular diseases or therapeutic areas, such as the orthopedics site sofcot.com.fr.

Because 80 percent of doctors online prefer sites in their own language, physicians typically visit sites that are either country specific or local versions of global sites. When asked to name the sites they visit, Swedish doctors most frequently mentioned ronden.se, which has provided a broad set of services to members of the Swedish Medical Association. Owing to excessive operating costs, however, the site was scheduled to shut down in March 2003.

In addition, chu-rouen.fr, a health portal sponsored by one of the largest French university hospitals, was named by the greater number of French doctors, whereas medline.de was named by the greater number of German physicians. However, no site was mentioned by more than 10 percent of the European physicians—a major difference from trends in the United States, where a single Web site, WebMD, commands a 23 percent share of physicians who use the Internet.

In all three countries, physicians are drawn to professional Web sites in traditional ways: through print ads in medical journals and word of mouth
from peers. (See Exhibit 3.) Specialists, in particular, value their peers’ opinion of a site.

As our 2001 study found with European patients, European doctors will give a Web site a limited number of chances. Physicians do not return to a site if it does not meet their needs on an initial visit—for example, if the information they find is too superficial or not up-to-date. Also, doctors tend to abandon their efforts to access a site immediately if the registration process for entering it is too cumbersome—for example, if they have to fax documents or make a phone call in order to acquire a password or gain entry.

Doctors Look to E-Health to Improve Efficiency and Quality of Care

Because budget pressures limit the time that doctors can spend with patients, quality of care is in danger of eroding. In France, for example, fee limits and other factors have reduced the average consultation between general practitioners and patients to around ten minutes, which many physicians consider inadequate to explore and resolve a patient’s problems effectively.

Compounding the problem of the shrinking consultation are three issues.

• The first is the growing expectations of patients. Generally more active in their care, more informed about their illnesses, and often armed with information they find online, patients increasingly demand more answers and involvement from their physicians.

• The second issue is the rise in demand for health care. As the European population ages, patients’ need for health care mounts. In addition, current economic conditions and living standards hint at an increased prevalence of chronic diseases, such as asthma, diabetes, and heart disease.

• The third issue is the declining ratio of physicians to patients. For a number of reasons, a scarcity of doctors is forecast for both France and Sweden over the next five to ten years—particularly in specialties such as radiology and obstetrics in France and psychiatry and geriatrics in Sweden.

Because they help address efficiency and quality issues, such tools as electronic medical records (EMRs), electronic prescribing systems, RDM technologies, and online communication with patients are beginning to surface in doctors’ offices throughout Europe. All these tools promise to shift the nature of interactions between physicians and patients toward better-coordinated patient care across providers and diseases. They also enable doctors to draw on the latest and most comprehensive patient information when addressing the needs of individuals.

Health Care Players Have a Powerful New Way to Reach Doctors

Organizations that build credible Web sites and succeed in drawing physicians to them stand to have considerable influence over health care decisions. (See Exhibit 4, page 12.) Seventy-four percent of European physicians online said that the information they find on the Internet has an impact on their knowledge, both of symptoms and diagnoses. Nearly as many—68 percent—said that it has an impact on their prescribing behavior. And a full 84 percent said that it has an impact on their knowledge about new treatments, including drugs. Doctors clearly view the Internet as an important medium for gathering information and boosting their knowledge.
EXHIBIT 4
THE INTERNET HAS AN IMPACT ON PHYSICIANS’ KNOWLEDGE AND BEHAVIOR

Has the information you have found online had an impact on . . .

<table>
<thead>
<tr>
<th>Percentage of doctors online</th>
<th>. . . your knowledge about new treatments, including drugs?</th>
<th>. . . your knowledge about symptoms and possible diagnoses?</th>
<th>. . . the way you interact with your patients?</th>
<th>. . . your prescription of treatments, including drugs?</th>
<th>. . . the types of diagnoses you have made?</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>51</td>
<td>33</td>
<td>84</td>
<td>26</td>
<td>54</td>
</tr>
</tbody>
</table>

Notes: The number of respondents was 117 in Germany, 102 in France, and 86 in Sweden. Figures do not always add up to 100 percent because respondents could also choose “not sure” or “decline to answer.”

Since e-health in Europe is likely to evolve in ways that mirror its widespread acceptance and use in the United States, we expect that the number of doctors online and the amount of time they spend there addressing professional issues—whether it’s to gain knowledge or treat patients—will rise dramatically over the next three years. Furthermore, the Internet promises even greater value to doctors who integrate it more fully into the workflow of their office and their delivery of care. As that happens, well-positioned health-care players will reap substantial benefits, too.
As investments in biomedical and clinical research have grown exponentially in recent years, the number and complexity of new products, treatment options, and practice guidelines have escalated as well. This onslaught of increasingly technical clinical information makes it difficult for physicians to stay up-to-date. In this environment, e-health sites with depth, accuracy, and credibility save doctors a great deal of time and effort in finding answers to clinical queries.

The vast majority of European physicians who use the Internet seek clinical information (84 percent) and read journal articles (72 percent) online. (See Exhibit 5.) A large number are also going online to communicate with colleagues, look for specific drug information, and research CME coursework. They are also using e-health to help share their medical knowledge with patients.

**Do You Use the Internet to...?**

<table>
<thead>
<tr>
<th>Percentage of doctors online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research clinical information</td>
</tr>
<tr>
<td>Read articles from medical journals</td>
</tr>
<tr>
<td>Communicate with colleagues</td>
</tr>
<tr>
<td>Research specific drug information</td>
</tr>
<tr>
<td>Research CME</td>
</tr>
<tr>
<td>Find sites to recommend to patients</td>
</tr>
</tbody>
</table>


Note: The number of respondents was 117 in Germany, 102 in France, and 86 in Sweden.

**E-Detailing: Learning About Drugs Through the Internet**

Physicians have traditionally spent a significant amount of time meeting with drug reps. In France, for example, the average physician has about six visits with reps per week. Since drug reps promote about three products on average per visit, the average doctor in France experiences about 18 weekly drug details.

Doctors—even the busiest ones—told us that they enjoy the face-to-face interactions with reps, valuing equally the reps’ knowledge about drugs and treatments and the opportunity to socialize. But given the heightened time pressures on doctors and the rising number of marketed drugs, detailing visits are growing shorter and less informative, forcing physicians to seek out additional drug information.
on their own. In Europe, 50 percent of physicians online now spend part of that time seeking drug information. This trend is most noticeable in Sweden, where 70 percent of doctors online use the channel to learn more about pharmaceuticals.

It is important to note that physicians do not view the Internet as a substitute for drug reps; rather, they perceive e-health as a complementary channel that can provide additional information on medicines and other treatments. (See Exhibit 6.) So-called e-detailing encompasses a wide range of offerings, such as virtual or interactive live sessions and scripted, on-demand video or downloads. In virtual e-detailing, which is provided by companies such as iPhysicianNet, doctors who commit to take part in live videoconference sessions hosted by drug reps receive a free PC, software, and Webcam from the vendor. In scripted e-detailing, which is provided by companies such as Physicians Interactive, doctors view a series of interactive screens, communicating with drug reps by e-mail or phone.

E-detailing is still in its infancy in Europe, which helps explain why 36 percent of doctors there are skeptical about its value. Only about 3 percent of physicians have actually had any experience with e-detailing to date—primarily through pilots run by selected pharmaceutical companies. For example, Pfizer, GlaxoSmithKline, and Novartis have experimented with scripted models of e-detailing. In Germany, Aventis has tested several different e-detailing options, such as a videoconference model and a noninteractive online e-detail.

Although they constitute a small group, these early adopters reported that e-detailing provides a valuable additional channel to in-person detailing. Most said that they like the idea of scheduling details at the times most convenient to them—generally after work hours. Doctors also reported that they appreciate the incentives provided by these activities. Aventis, for example, operates a loyalty program called MediMiles that awards physicians points for participating in e-details and allows them to exchange the points for free medical publications or medical office products.

With face-to-face contact valued so highly among European physicians, e-detailing is unlikely to replace reps. Yet, given stiffening competition for access to doctors and restrictions on physicians’ time, the Internet offers physicians a uniquely attractive combination of flexibility and efficiency. Thus, e-detailing may carve a niche for itself, supplementing drug rep visits and probably even changing the way reps interact with physicians during live visits.

Pharmaceutical companies embracing this new sales technique in Europe will need to tailor their e-detailing approaches to each country. The following specifications will be key.

• Technical requirements: e-detailing by videoconferencing, for example, would probably not be well received in countries where most physicians use a 56K dial-up modem.

• Legal constraints: in a notable departure from the United States, most countries in Europe prohibit pharmaceutical companies from buying PCs for physicians.

• Cultural norms: in Sweden, for instance, a significant share of today’s offline detailing takes place at lunch meetings—a format that may be challenging to match with e-detailing.

If they succeed, e-detailing programs promise not only increased access to doctors but also cost-
effective access. Novartis, in a 2001 study, found that using iPhysicianNet’s videoconference system in the United States yielded significant savings when compared with in-person reps. “Virtual” reps could attain more sales calls per day (13 compared with 8 in-person visits); longer details (9 minutes compared with 3 minutes); and lower costs per minute of detail ($14 compared with $58). Of course, the low-cost, easy access afforded by e-detailing must be balanced against its impact on doctors.

Meeting the Increasing Demand for Online Medical Training

Just as the Internet can make it easier for doctors to accommodate drug rep “visits,” e-health also helps doctors fit continuing medical education into their hectic schedules. Although physicians place high value on learning, they don’t always have the time and money to spend traveling to medical seminars. In interviews with BCG, for example, physicians made the following comments: “Attending continuing education courses in the evening and on weekends takes too much time away from my family” and “If I have to obtain further education as a doctor several times a year, I would definitely make use of online offerings.”

Already, a large number of surveyed physicians—as high as 61 percent in Germany—surf the Web in search of medical training. But most are disappointed with the offerings they find, and, as a result, only a small percentage actually complete medical training online. (See Exhibit 7.) Physicians find current CME programs lacking—primarily because the sector, like e-detailing, is still in its infancy in several European countries. Content on many sites is not yet interactive, so physicians can do no more than read basic case studies on computer screens. Even chu-tours.fr, which the national committee for continuing medical education (the Comité National de Formation Médicale Continue) ranked as the best CME site in France in 2001, offers merely an online version of an offline course already administered to students. The online course lacks interactive options, animated illustrations, and films.

We believe, however, that physicians’ interest in online CME courses will continue to grow as new regulations on such training emerge throughout Europe. Although no laws currently require physicians to update their skills, a new law could be implemented by the end of this year in Germany that would require doctors to complete certified medical training in order to maintain their licenses. Already, in anticipation of these regulations, a few online medical-education pilots, such as medizinonline.de, multimedica.de, and dgn.de, are starting to emerge in Germany.

### EXHIBIT 7
EUROPEAN PHYSICIANS SEEK, BUT CAN’T FIND, ONLINE CONTINUING MEDICAL EDUCATION

<table>
<thead>
<tr>
<th>Country</th>
<th>Research CME</th>
<th>Complete CME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>61%</td>
<td>20%</td>
</tr>
<tr>
<td>France</td>
<td>33%</td>
<td>20%</td>
</tr>
<tr>
<td>Sweden</td>
<td>35%</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Percentage of doctors online**


Notes: The number of respondents was 117 in Germany, 102 in France, and 86 in Sweden. Differences across countries result in part from varying regulations and the value of current offerings.
Medizinonline.de, sponsored by Springer, offers the broadest German CME offering, covering 14 specialties ranging from anesthesia to urology. Doctors read about the topic of their choice (typically in an article from a Springer journal), complete the questionnaire to test their understanding of the article, and e-mail their answers to an online evaluation service. For each correctly completed test, physicians earn one CME credit.

In the United States, where similar regulations have existed for some time, around 60 percent of physicians now complete medical training online at Web sites with certified educational offerings. The primary providers of such coursework are medical schools, specialty associations, and nonprofit organizations. Grants from pharmaceutical companies pay for half of the cost. Those drug companies that award grants are not allowed to influence the sites’ content or to offer product- or disease-related continuing education on their own sites.

In Sweden, where CME requirements are currently being considered, a consortium called IPULS has been formed jointly by professional associations and payers to evaluate and coordinate all continuing medical education at a national level. All CME suppliers, private as well as public and offline as well as online, are encouraged to submit their curricula to a review committee at IPULS, which assesses the quality of courses from both a scientific and an educational viewpoint. Accredited courses will be presented and applications will be handled on a Web site starting in the spring of 2003.

Because demands on doctors’ time are likely to continue to escalate, online CME will almost certainly grow in Europe over the coming years. Universities, medical centers, and associations, along with the medical press, are best positioned to offer this educational service since they have credibility and can draw on their existing academic courses. By contrast, the ability of pharmaceutical companies to offer online classes that are certified by medical institutions or associations remains uncertain in Europe. Some companies are nonetheless starting to offer valuable courses, as Aventis does at ZoomCancer.com. Ultimately, however, European concerns that corporate-sponsored offerings may focus too heavily on product marketing may mean that the role of pharmaceutical companies in Europe will be limited to indirect sponsorship, as is the case in the United States.

If pharmaceutical companies are allowed to compete in this arena, the content of their courses must be unique and must differentiate them from academic or media sponsors. Because doctors focus on delivering more cost-effective care, for example, they will be seeking proven practice guidelines that can help them rationalize their approaches to treatment and care. This need presents an opportunity for pharmaceutical companies to supply, for instance, evidence-based medical databases and resulting practice guidelines in local languages.

Although payers have already published selected guidelines for most critical treatments, they remain unavailable for an entire range of less common or critical diseases—primarily because the economic benefit of developing such guidelines is low and the costs are prohibitively high. Creating these evidence-based databases and deriving practice guidelines from them would allow drug companies to improve their relationships with physicians by increasing doctors’ efficiency and efficacy; improve their relationships with payers by helping them ensure the best outcomes and thus better manage the costs and quality of care; and ensure a higher level of compliance with drug regimens that prescribe the companies’ products.

Building Patients’ Knowledge in More Efficient Ways

Doctors aren’t the only ones interested in building their medical knowledge online. In Germany, for example, 70 percent of physicians said that patients have asked for treatments they learned about on the Web, whereas 55 percent reported that patients have requested specific drugs they found online. Such requests place additional time pressures on physicians, who must help patients correctly interpret study data or medical information, and then must justify the selection of treatments and drugs that they feel are most appropriate.

Given patients’ appetite for information and the burden that misinformation creates for doctors,
about one-quarter of European doctors surveyed—and 55 percent of German doctors—are eager to find and recommend high-quality Web sites that explain health conditions and their treatment to patients. Physicians view the sites as a way to strengthen their bonds with patients, exert more control over the information that patients view on the Web, and free them to focus consultations on their patients’ most pressing issues.

Physicians we interviewed for our survey said that Web sites worthy of their recommendation should provide patients with the background information that physicians would share in detail during office visits if they had the time. Such sites, doctors said, should also

- exploit the interactive benefits of online media, tailoring information to different levels of understanding and providing illustrative online movies and presentations
- offer easy-to-print, customizable information that physicians can give to patients who aren’t likely to follow up online
- avoid actions that appear to direct physicians’ treatment decisions in overt or biased ways

According to the physicians we interviewed, no existing Web destinations serve as model sites for patients. In the three countries, about 25 to 40 percent of the physicians who sought to refer patients could not find a site that met their criteria.

When doctors did refer patients to Web sites for additional information, more than 90 percent of doctors in France and Germany and almost 80 percent of doctors in Sweden directed individuals to different destinations than those the doctors preferred for their own use. The likely reason is that doctors don’t believe that any of the current offerings serve both groups well. However, our companion U.S. study revealed that more than one-third of U.S. doctors who recommended Web sites directed patients to professional association sites, many of which feature patient-reference sections. If this apparent convergence of patient and physician sites plays out in Europe, it may create attractive opportunities for integrated marketing that reaches both audiences.

Of the online health-related destinations to which doctors do refer their patients, sites sponsored by patient associations, such as the Swedish Diabetes Association (diabetes.se), are viewed as the most reliable resources. Interestingly, in Germany a number of surveyed physicians refer patients to their own personal Web sites, where they have better control over the type and quality of content their patients access. Universities, medical centers, and patient associations (known as Selbsthilfe groups) all possess the credibility that patient sites require. Some of these organizations have already developed comprehensive offerings, such as the psoriasis-bund.de site in Germany. Although the Web site was created by the psoriasis Selbsthilfe group, information provided on the site is sponsored by Biogen, among others.

Like Biogen, pharmaceutical companies could take the opportunity to sponsor Web sites that educate patients with unbiased and comprehensive information about diseases or therapeutic areas. Some of these pharmaceutical-sponsored sites could even bear the brand of the drug company. ZoomCancer.com is one such site, offering patients and physicians information on disease and treatment, self-training, and practical tips while bearing the Aventis brand. Information like this could also be packaged and made available to physicians who want to post it on their own Web sites.
E-Health Tools Promise to Improve Patient Care

Because they help address efficiency and quality issues, tools such as EMRs, electronic prescribing systems, RDM technologies, and online communication with patients are beginning to surface in doctors’ offices throughout Europe.

Once incorporated into physicians’ arsenals, the tools—in their ability to capture and share patient data online—promise to advance the long-sought goal of coordinating care for individual patients across all the conditions, treatments, and providers who affect the patient’s health.

Today in France alone, more than 120 disease management networks exist. The networks involve a large number of players, including hospital- and office-based physicians, nurses, and pharmacists. These groups coordinate the care delivered to a single patient so that

- the best and most integrated care possible improves the patient’s quality of life
- savings are achieved by eliminating redundant exams, dangerous interactions among medications, and the need for urgent, invasive care
- the various constituents working with a patient—including social service providers—have an open channel for communication
- the patient receives critical information—on nutrition, for example—and works with caregivers to participate in treatment decisions
- doctors can track outcomes to formulate and deploy practice guidelines in a therapeutic area

Although the Internet hasn’t created these networks, e-health will certainly promote their development with new, cost-effective ways to improve care. (See the insert “The Future of Internet-Enabled Disease Management.”)

Using Electronic Data to Improve Patient Care

Rising patient demand for more personalized care will increase physicians’ need for more comprehensive and up-to-date patient data. EMRs and e-prescribing systems already enjoy widespread penetration in Europe because physicians appreciate the efficiency of computerized access to their patients’ medical histories and the ease of printing out prescriptions rather than writing them by hand. According to our survey, more than 60 percent of physicians in France, Germany, and Sweden use EMRs today, while about 30 percent have adopted e-prescribing. (See Exhibit 8.) These physicians

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**EXHIBIT 8**

THE WIDESPREAD USE OF E-HEALTH TOOLS PROMISES IMPROVED CARE

<table>
<thead>
<tr>
<th>Penetration of patient-care tools</th>
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<tr>
<td></td>
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<tr>
<td>Germany</td>
<td>France</td>
</tr>
<tr>
<td>Electronic medical records</td>
<td>66</td>
</tr>
<tr>
<td>Electronic prescribing</td>
<td>38</td>
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</tbody>
</table>

Percentage of doctors surveyed


Note: The number of respondents was 254 in Germany, 251 in France, and 101 in Sweden.
Currently, doctors predominantly view the tools primarily as offline administrative resources. Very few have yet embraced the interactive possibilities that Internet-enabled patient-care systems will afford.

There are notable exceptions to this rule—particularly in Sweden, where Internet penetration is high. There, it is estimated that more than 70 percent of all doctors—and more than 90 percent of general practitioners—use EMRs. And in southern Sweden, the country’s state-owned pharmacy monopoly, Apoteket AB, is running a pilot that integrates doctors’ e-prescribing tools with pharmacies via the Web. The integration enables pharmacies to receive and aggregate information about patients’ prescriptions automatically, and to customize fulfillment services to the individual. This information can facilitate home delivery and compliance packaging, which dispenses prescriptions in single, prepackaged doses to be taken on specific days or at certain times of the day. If successful, the model is likely to be rolled out fairly rapidly in other parts of the country. In Sweden’s northernmost Norrbotten region, more than 90 percent of physicians are already using e-prescriptions, lowering the barriers to future integration with pharmacies.

Given the tools’ early promise and already high rates of adoption, EMRs and e-prescribing could improve the quality of patient care. For example, doctors could use online patient records as a medium for instantly exchanging data, test results, and even medical imaging with colleagues and medical facilities. Such connectivity would ensure that patients receive the most continuity possible in their care, even if they switch doctors, see specialists, receive emergency care in their home country or abroad, or are admitted to or discharged from a hospital.

Similarly, prescribing errors and their consequences could be significantly reduced by linking a medical office’s prescription-generating system with other tools—such as the latest online information on drug interactions available from a university; the standard dosage recommendations from a medical association or consortium of pharmaceutical companies; and the computer systems of the pharmacies where the prescriptions are filled. Automatic transmission of prescriptions would reduce both errors and the huge volume of calls that pharmacists must make to physicians when they cannot read their handwriting.

Furthermore, automatically cross-checking prescriptions against payer formularies online could ensure that the most cost-effective treatments are prescribed. In certain Swedish counties, such as

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2 BCG’s questions about EMRs and e-prescribing asked doctors whether they used computer- or Web-based technologies. In the European health-care industry as a whole, use of Web-based tools is currently limited.
Jönköping, where doctors have already embraced this approach, formulary compliance rates are double those in counties where doctors are not prescribing online (50 percent versus 25 percent).

In the near future, doctors should also be able to use integrated e-prescribing to ensure that patients are filling and refilling their prescriptions at the pharmacy. Such monitoring could lead to increased compliance with prescribed drug regimens and thus improved health. Roadblocks remain, of course—including the security of patient data, the financing of universal systems, and acceptance among physicians. Still, Web-enabled e-prescribing is more widespread in the United States, and therefore increased use is feasible in Europe.

E-prescribing that is fully enabled electronically could also make it easier for payers to enforce drug formulary recommendations or required substitution of generic medications. In the extreme, doctors’ increased compliance with formularies would dilute the influence that drug reps enjoy today, giving payers greater bargaining power when they negotiate drug prices with pharmaceutical companies and distributors.

E-prescribing offers pharmaceutical companies some advantages as well—despite the risks of pricing concessions and diminished marketing influence. Because e-prescribing systems can be used to submit prescriptions for fulfillment automatically and monitor the frequency of refills, they can help pharmaceutical companies boost drug compliance. They can also eliminate the problem of patients failing to fill prescriptions—which is estimated to occur among one-third of all new prescriptions in France.

Still, pharmaceutical companies might be best off working behind the scenes—for example, by offering grant money to promote the growth of tools such as e-prescribing and EMRs. By contrast, partnering with a software company, for example, to cobrand a practice management tool might be risky, given physicians’ comments in interviews that they might view such offerings as biased and less than credible. Physicians also explained that any technical problem they experienced with a sponsored device or piece of software could reflect negatively on the image of the sponsoring pharmaceutical company.

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**Experimenting with Remote Disease Monitoring**

By capturing, analyzing, and reporting patients’ vital signs and health data, RDM tools could one day prove invaluable for certain portions of the patient population. One example is Polymer Technology Systems’ BioScanner 2000. This blood-testing device—designed for diabetes patients to use at home—measures blood sugar, total cholesterol, HDL cholesterol, triglycerides, and lethal ketone levels. The data collected by the electronic testing device can be uploaded to a personal Web site, where they can be tracked and reviewed by both patient and physician. As a result, doctors can identify potentially dangerous trends and adjust medications as necessary. Another example is LifeScan’s OneTouch, which monitors glucose levels with only a small blood sample. Its companion software automatically creates in-depth reports and evaluates progress vis-à-vis goals.

Today RDM tools are still in their infancy in both Europe and the United States. Only about 6 percent of online physicians in Europe and 7 percent in the United States use the technologies. But early adopters have reported high levels of satisfaction. In our survey, more than 80 percent of doctors who have participated in pilots experimenting with RDM tools said the technologies allow them to deliver better care and improve patient satisfaction. Given such success, doctors are likely to embrace additional technologies as the field expands into new specialty areas and diseases. The type and number of devices used to monitor diseases electronically are already growing to include watches that function as glucometers, such as Cygnus’s GlucoWatch Biographer, and hand-held urinalysis devices that test kidney function.

One limitation to the development of such tools is ambiguity regarding who should finance them: payers, doctors, health care networks, or other players. In the United States, few insurance companies reimburse medical offices for the cost of the devices. But that may change. Studies show that RDM reduces the cost of care while improving quality—two outcomes that might inspire payers to finance the devices.

A 2001 study published by U.S. managed-care player PacifiCare, for example, determined that hospitals using RDM devices for patients with
chronic heart failure realized a 174 percent return on their investment. The devices helped patients return home sooner and avoid further cardiac events that would have required emergency care and readmission.

In a similar study published in 2002 by the University of Colorado, researchers concluded that teenagers with type I diabetes who share their blood-sugar readings with physicians every two weeks through a modem could manage their disease as effectively as they could with quarterly office visits. The modem transmissions cost about one-sixth of the $300 total cost of office visits.

For medical software vendors and medical device manufacturers, the market potential for RDM is huge and largely untapped. To exploit these opportunities, technology players must overcome two important challenges. First, RDM devices must be compatible with other information tools—no easy task in a highly fragmented market lacking universal technology standards. Second, players must ensure that the tools actually deliver on the promise of improving care and reducing costs.

No matter how much information a new piece of software or new device provides, it will become just another expense on a health care player’s balance sheet unless manufacturers employ change management strategies to help integrate the tool into physicians’ workflow. Technology companies that do so stand to build a very strong competitive advantage. As our 2001 report illustrated, doctors are reluctant to take the time to learn multiple software programs and technologies. As a result, physicians will likely stick with one device once they have invested time in mastering it.

Payers stand to gain as well. By facilitating communication, data capture, and data sharing among health care constituents, the combination of RDM technologies and fully Internet-enabled EMRs will enhance the efficiency of disease management networks—garnering greater interest and participation among physicians, and cutting medical costs.

Communicating with Patients Online

Although it enjoys neither the widespread use of EMRs and e-prescribing nor the high rates of satisfaction associated with RDM, online communication with patients represents an important use of the Internet for doctors. Today about 20 percent of online physicians in Europe communicate by e-mail with their patients—primarily because patients themselves request the contact. But doctors tend to limit their online interactions to only about 2 to 6 percent of their patient base.

The tools—mostly e-mail—permit interactions between physician and patient, and the delivery of medical advice as soon as symptoms surface. Thus, they promise to help patients avoid more serious health problems, office visits, and even hospitalizations. Yet doctors are skeptical about online communication, fearing that answering queries by e-mail will sap even more of their already scarce time without generating efficiencies or payment for the time they spend on the Web. Some physicians also fear that e-mail may entail legal risks associated with the confidentiality of patient information and liability for incomplete diagnoses and resulting treatment errors.

For payers, however, online communication between doctors and patients can offer a major advantage if the tool helps reduce the number of unnecessary office visits. In the United States, a number of payers have partnered with medical software providers to test pilots that reimburse doctors with reduced fees—that is, lower than the reimbursement physicians receive for office visits—in exchange for “seeing” patients virtually through unique, structured interfaces. Initial results indicate that the cost savings and patient satisfaction associated with the tool could be significant. Still, those who make such offerings available will need to prove to doctors that communication with patients can be profitable and manageable. Otherwise, physicians will not be willing to grant patients Internet access to them.
If e-health is just a sideshow or a passing fad in Europe, as many naysayers in the health care industry have contended, it appears that no one has yet broken the news to doctors. To the contrary, European doctors have found that the Internet can fundamentally transform their interactions with their health-care constituents and add value to their practice and patients. In a similar way, health care players that integrate e-health into their operations can alter the processes and economics that have long defined their businesses.

Indeed, the future of e-health and of health care delivery in Europe will be closely intertwined. As offerings become more cost effective, user friendly, and powerful in enhancing the quality and efficiency of care, more payers, physicians, and patients will have a compelling reason to use them. This growth will fuel the need and demand for widespread standards, such as Health Level 7 (standards for communication) and DICOM (standards for digital imaging in medicine), which facilitate the sharing of patient and other data online. Such standards are likely to increase dramatically in importance, driven largely by initiatives from local government payers and the European Commission.

Ultimately, we believe, the organizations that exploit e-health successfully will be those that balance the tradeoff between lower-cost and higher-quality care.

A Powerful New Sales and Marketing Tool for Pharmaceutical Companies

Pharmaceutical companies’ sales and marketing strategies and capabilities are perhaps their most important levers for success in today’s environment. Pipelines for new products are less robust than financial analysts demand; competition among existing and impending products is fierce; and the payers and consumers of health care seek increasing control over the selection, price, and delivery of health care treatments. Yet in formulating their all-important marketing strategies, many pharmaceutical companies are operating below their potential; that is, they treat online and offline channels as an either-or proposition, comparing the costs and benefits of each and then choosing one over the other. In reality, the channels are complementary and far more powerful when used together.

We believe that the most effective way to handle marketing is to integrate offline and online marketing into a cohesive strategy that targets patients and physicians—and payers—simultaneously. Payers will likely gain greater influence over prescribing options in the future and have already voiced negative sentiments about the pricing strategies of pharmaceutical companies. By demonstrating its commitment to helping payers hold down costs and improve care, a pharmaceutical company may be able to alleviate tensions with payers and thereby differentiate itself from the competition.

The Internet is an attractive tool in this mix because it changes the nature and economics of communicating to patients and physicians. First, pharmaceutical companies need no longer rely on doctors as the sole gatekeepers of medical information. Although they cannot reach patients directly through their own Web sites, pharmaceutical companies can sponsor content on unbiased third-party sites that doctors will recommend to their patients. Second, as the Novartis study illustrated, pharmaceutical companies can use online technologies to reach a far greater number of doctors more cheaply than in-person rep visits ever could.
Coordinating the entire mix of online and offline marketing ensures that the messages received by all the constituents in health care are aligned. It also allows pharmaceutical companies to make tradeoffs on the basis of the return on investment that individual marketing channels and approaches contribute to overall marketing goals. For example, pharmaceutical companies may find the low-cost access of e-detailing to be sufficient when marketing a me-too drug to general practitioners who don’t prescribe many drugs. But they probably would continue to rely on more costly rep visits that have greater impact when reaching out to heart specialists with messages about the first product to be unveiled in a new class of drugs.

Although companies that integrate their marketing will benefit from exploiting similarities and content across national markets, they will also need to tailor some activities to individual countries and take into account legal, cultural, and technical differences among those countries. With the vast majority of physicians preferring Web sites in their own language, offering well-translated clinical information will be important. Of equal or even greater importance, however, is understanding the legal environment for e-health in various European countries. What’s permitted—and what’s not—as well as the potential risks associated with e-health vary quite a bit among countries. An e-detailing approach that works well among highly wired Swedish doctors, for example, might be illegal in France, where laws could prohibit companies from providing Web-conference equipment to physicians.

From our own extensive work in the area, we have developed a framework—the demand leakage model—to help our clients analyze the optimal marketing mix to spur drug sales. (See the insert “Increasing Drug Sales: Eight Chances to Capture the Consumer,” page 24.) Our framework lays out the chain of steps required if a particular drug is to be prescribed and sold. It then assesses just how many of the patients who could be helped by a drug actually move through all the steps to become consumers of the drug. The degree of demand that “leaks out” at each step represents an opportunity for pharmaceutical companies to deploy online and offline marketing to capture a greater share of the market.

Once pharmaceutical companies identify where the biggest leaks in demand occur for the drugs they are selling, they must identify which barriers are creating those leaks and which potential levers they could pull to increase demand. Leaks at either end of the cycle—that is, in patients’ awareness of a condition and their willingness to consult a doctor at the front end or in filling and then complying with prescriptions at the back end—must be addressed by reaching the patient. By contrast, leaks that occur during the middle stages—when the doctor diagnoses a disease and selects a drug to prescribe—must be addressed largely with physicians. At each of these steps, the most effective marketing approaches should be identified. They will include both traditional offline activities and e-health initiatives.

**Awareness and Consultation.** E-health and offline offerings should educate patients about symptoms, explain the consequences of not seeking treatment, lay out therapeutic options, and identify where patients can turn for help. Because most European countries forbid advertising targeted directly to patients, one option for pharmaceutical companies would be to find a partner outside the pharmaceutical industry. Given the importance of their perceived neutrality and expertise, academic medical centers and medical associations would be the most valuable branding partners.

**Diagnosis and Prescribing.** The key here is to increase physicians’ general understanding of a disease and the value of drug therapy. Marketing at this stage has long been dominated by rep visits and advertising to physicians. Although these approaches should continue, online medical support—such as databases highlighting clinical outcomes and updated practice guidelines—could be used to help increase the number of doctors who correctly diagnose a condition and prescribe a company’s drug of choice. In addition, CME could be a primary tool at this stage. Again, partnerships with medical centers and internationally respected doctors are likely to be important from a branding perspective.

**Market Share.** Historically, companies seeking to boost market share have targeted physicians with messages about the advantages that their drugs offer in efficacy, safety, and patient compliance. But given the increasingly active role of payers and patients in treatment selections, these groups too have become important targets.
To understand how a company can use BCG’s demand leakage model, consider the hypothetical case of a pharmaceutical company marketing antidepressant medication in France. The first step in the marketing process would be to estimate the total size of the affected market—that is, all the patients who might be served by the drug (1). In this case, up to 6 million French people are estimated to suffer from depression, under the widest definition of the disease. But not every sufferer will be aware that his or her symptoms are abnormal (2), and even among those patients who are concerned about their condition, only some will visit the doctor to discuss their problem (3).

Doctors will not diagnose all cases of depression correctly (4), and those who do will not always view drug therapy as the best approach (5). When doctors opt to prescribe antidepressants, however, they will choose from a multitude of drugs, so that only a portion of their prescriptions will be written for any one company’s product (6). Out of these written prescriptions, many will go unfilled (7), and many filled prescriptions will not be taken in compliance with the prescribed regimen (8). Ultimately, at the end of this long chain, pharmaceutical companies often find that they serve a mere fraction of the total market their product can potentially benefit. (See the exhibit “Demand for Drugs ‘Leaks Out’ at Various Stages of Patient Care.”)

How does this translate into a marketing strategy? Each step along the chain represents a decision that either drives a customer toward a sale or limits demand for the drug. The steps at which the greatest demand for a drug “leaks out” will vary by individual disease, specific drug, its position in the product life cycle, and market-specific conditions.

When considering depression, for example, the leakage between the number of sufferers at step 1 and the number of sufferers aware of their disease at step 2 will be much higher than for other diseases such as psoriasis, in which the rate of prescribing at steps 5 and 6 may pose the greatest potential loss of drug sales. Once a drug company figures out where it is losing the greatest number of potential customers, it can decide which mix of sales techniques will be most effective to stop leakage and increase demand.
Gaining access to the first target group, physicians, has become increasingly difficult as the number of competing drugs in many therapeutic areas has risen. But, as our study shows, online messages can supplement offline rep visits and reach doctors when they are logged on at home. Similarly, e-detailing can reinforce messages about a drug’s value and help reps tailor drug information to a physician’s queries or prescribing behaviors. E-detailing might also present an opportunity for smaller pharmaceutical companies without large sales forces to reach physicians.

The second target group, payers, already try to influence doctors’ drug selections. Therefore, influencing payers’ drug selections is the next logical step in building market share. Although unique drugs that don’t have much competition may have little problem gaining a recommendation on payers’ formularies, me-too drugs excluded from automatic and electronic formulary listings may risk being cut off from large groups of potential customers.

In Sweden, formulary recommendations have a major and rapid impact on a drug’s sales. There, a drug’s inclusion on a formulary is determined not only by efficacy and safety but also by price and pharmacoeconomic data, the latter progressively receiving more attention. Several other major European markets may be moving in the same direction in the near future.

To differentiate their products so that price is not the only criterion for drug selection, major pharmaceutical companies can use patient and outcomes data captured through e-health sources to make an economic case for the value of their products to formulary committees. Given current skepticism surrounding such pharmacoeconomic data, collaboration with trusted academic medical centers will be critical. For me-too drugs, Web-enabled disease-management networks may help a product differentiate itself and ensure better clinical outcomes. With both approaches, pharmaceutical companies may be able to secure risk-sharing agreements with payers that specify that a drug’s inclusion on a formulary is based not solely on price but also on delivered savings or quality improvements.

The importance of influencing the third target group, patients, should not be understated. Although direct-to-consumer advertising is banned in most of Europe, health portals, university sites, and other e-health destinations sponsored by third parties can serve as an important source of information that legally influences patients, who then influence payers.

**Fulfillment and Compliance.** The goal of improving the rate at which patients fill prescriptions and comply with drug regimens is shared by pharmaceutical companies and payers. The opportunity exists, therefore, for the two types of organizations to jointly make the significant up-front investment needed to track these actions and communicate with patients, pharmacies, and physicians. Fully Internet-enabled EMRs, e-prescribing systems, RDM tools, and disease management networks all would improve the rate of fulfillment and compliance.

**Quality Care at an Affordable Price for Payers**

For the most part, all European payers face the same critical issue: How can they maintain or improve the health of a population without spending more than they can afford? One option is government reforms. And indeed, since the 1980s payers in Europe have been struggling to institute changes that will rein in health care spending. (See the insert “Reforms in Europe Could Give E-Health a Shot in the Arm,” page 26.)

Two areas of e-health offer important opportunities to address payers’ goals: e-prescribing and Web-enabled disease-management networks.

**E-Prescribing.** Payers could help significantly boost doctors’ compliance with drug formularies—and therefore help contain drug costs—if they helped roll out e-prescribing tools integrated with EMRs and formulary information. First, the use of e-prescribing technology would make it easier for doctors to write prescriptions for drugs that are on formulary by making formularies automatically available at the exact moment when physicians review patient data and write prescriptions. Second, combining online technologies with financial incentives will encourage even greater formulary compliance among physicians. Holding doctors financially accountable for the costs of the drugs they prescribe can be a particularly powerful lever.
Today doctors in Sweden comply with formularies on about one-quarter to one-half of the prescriptions they write. If budget incentives and e-prescribing tools linked to payer formularies could boost this number, securing a spot on the formulary would become essential to pharmaceutical companies seeking to command a leading share of their market. Ultimately, this shift would deliver bargaining power to payers, who could demand significant price concessions from the manufacturers of me-too drugs.

Furthermore, once e-prescribing is fully integrated with pharmacies’ own databases, physicians will be able to follow up on patient compliance with prescribed drug regimens. By helping increase the number of patients taking their medicines as prescribed, payers could realize substantial improvements in clinical outcomes and reductions in emergency or in-patient treatment costs. Finally, fully integrated e-prescribing tools could also enable pharmacies to increase efficiency significantly, particularly in terms of reducing costly inefficiencies such as stockpiling.

Web-Enabled Disease Management. Using the Internet to enhance disease management has even greater potential for improving outcomes and limiting costs in health care. The concept of disease management is hardly new; it was first introduced by BCG about a decade ago. But the improved communication and enhanced monitoring that e-health technologies provide have given disease management a significant boost in the United States by making it more feasible and cost effective. Although Internet penetration in Europe lags behind U.S. rates, disease management in Europe has taken off in response to growing cost concerns.

In health care systems that are financed largely through public funds, as they are in most of Europe, government authorities have introduced reforms in an attempt to curb health care costs, which threaten to grow faster than the European economy as a whole. Those reforms make it difficult for health care players to succeed using their traditional business strategies—and thus create an environment in which e-health offers distinct advantages.

Reform in France. Attempts at cost containment have been aggressive in France. Drug reimbursement has been limited for older or less efficacious products, and drug prices are being renegotiated every three years with price-volume agreements. But success has been elusive. Despite a law mandating substitution, for example, only about 4 percent of prescriptions in France substitute brand-name drugs with available generics. In this environment, government debates have explored even more stringent regulations. Possibilities include limiting reimbursement for off-patent drugs to fixed fees and mandating that doctors deliver care consistent with practice guidelines drawn from outcomes experience.

Reform in Germany. In a full-scale attack against escalating costs, Germany has attempted to slash health care spending by designating diagnosis-related groups (DRGs) of services as the basis for provider reimbursement; establishing a major, soon-to-be-introduced program for disease management of a small group of serious chronic conditions; and enacting a law requiring generic substitution of prescription drugs. In addition, during the next year or two, major reforms are expected to deregulate three critical components of the state’s health-care system: provider monopolies will be broken up; so-called sick funds will be granted greater freedom to offer differentiated services; and drug distribution will be opened to online and mail-order retailers.

Reform in Sweden. DRGs have been in effect in Sweden for ten years. And in October 2002, the country turned to mandated generic substitution for prescription drugs. At the same time, a new governmental body, the Pharmaceutical Benefit Board, is gearing up to evaluate which new and existing drugs should be reimbursed by the state. Finally, over the last 12 months, responsibility for the drug budget has shifted from the state to the same public bodies responsible for the cost of health care services: county councils. The councils are in the best position to evaluate the total cost and quality of care.
Future growth of disease management in Europe depends on four developments in e-health. First, EMRs must make patient data accessible across all providers serving a patient. That means all the constituents in health care must be online and their software and technologies must be compatible. Second, EMRs, e-mail, and all platforms for sharing patient data must be secure, protecting patients’ privacy. As new disease-management programs roll out in Germany, for example, sharing patient and practice data has emerged as a major early concern among doctors. Third, e-health tools must be highly customized and interactive to permit communication between physicians and patients, and allow patients to learn more about their specific conditions and treatment options. Fourth, RDM tools must be easy to use and affordable for patients; they also must do more than just dump patient data on physicians. Careful monitoring will occur only if the monitoring tools use automatic features and alerts to submit data regularly and help physicians interpret them.

Promoting the use of these tools and integrating them into a disease management network will generate significant costs and new responsibilities for payers. Thus, payers should experiment with pilot programs that identify the optimal mix of both technology and physician and patient involvement to ensure effective disease management for minimum added cost and maximum long-term gain.

A Chance for Providers to Restore Their Image Along with the Bottom Line

Health care providers in Europe—including hospitals, clinics, and academic medical centers—face a critical lack of public funding and increasing criticism from patients for failing to eliminate what can be lengthy waiting times to see a physician or to get needed treatments or surgeries. In some countries, providers’ close collaboration with pharmaceutical companies—particularly on clinical trials—is also coming under scrutiny. To help combat these financial, operational, and image problems, major health-care providers can take advantage of e-health tools to address three areas central to their survival: improving operational efficiency, building on their broadly respected expertise in medicine, and deriving greater value from their proprietary clinical data.

Improving Operational Efficiency. There is no doubt that doctors’ widespread use of EMRs in Europe has moved providers closer to improved efficiency throughout their networks. But the primary advantage offered by many providers’ EMR systems today is the time saved by no longer having to search for paper-based files; that is, few providers tap into the power that fully integrated medical information affords, such as computerized analysis of patients’ illnesses, treatments, and outcomes.

Efficiency will be improved dramatically and patient care coordinated across departments only when e-health systems and platforms offer these advanced capabilities and facilitate integration of patient information with other key applications in the network. For example, analyses of patient flow and waiting times in addition to improved planning of both clinical activities and human resources needs could unlock significant value. Such moves will prove critical: in Germany, for instance, providers will increasingly be reimbursed per case, and payers will be benchmarking clinical performance across provider systems.

Promoting Medical Expertise. Academic medical centers and major hospitals enjoy unique credibility as sponsors of e-health sites that physicians respect and visit. These players can draw on their expertise in therapeutic areas and on the information they develop through teaching and research to offer high-quality content. Another possibility for medical centers is to develop online CME programs. An internationally renowned academic medical center or university hospital enjoys a global brand that could command a large market and potentially generate attractive revenues in the training realm.

Providers may find pharmaceutical companies willing to cobrand and finance developments in certain therapeutic areas to gain access to both the clinical expertise and the key customer groups that they possess. One example of a site embracing this approach is sfdermato.org, the association portal for dermatologists in France, which is sponsored by Roche, Novartis, LEO Pharma, and Pierre Fabre, among others. In a sector where providers will increasingly need to compete for patients and resources, strong e-health offerings could help them attract the most desirable patients while boosting their influence among the most active and prominent doctors.
All health-care players introducing e-health offerings will want to engage the same forces that move doctors and patients to trial: demonstrated efficacy, the backing of key opinion leaders, and targeted marketing. These elements offer the greatest opportunity for success in launching e-health products.

Detail aggressively. Take the new products directly to doctors and train them in how to use the tools. Engage reps not only in sales but also in training and customer service and support.

Provide evidence of efficacy. Furnish doctors with compelling data on the tools’ effectiveness.

Cultivate a network of key opinion leaders. Respected peers can provide professional recommendations and personal testimony.

Engage in strategic partnerships to copromote tools. This includes relying on incentives from payers, providers, and pharmaceutical players.

Help educate and mobilize patients. When possible, support and sponsor efforts to make superior information about general health issues more readily available—and valuable—to patients.
Two years ago, e-health in Europe was a great, but unfulfilled, promise. Today it is a reality that is having a significant impact on health care players and local health-care systems. Although it emerged quietly, it has become a powerful force among doctors in Europe.

By transforming all the components of health care delivery—from the way a prescription is written, submitted, and filled to the way outcomes from treatments are monitored and used to generate practice guidelines—e-health promises to change the nature of medical interactions and economics in the health care industry. And that represents an enormous opportunity for pharmaceutical companies, payers, and health care providers, who can use e-health tools to reach and influence physicians and patients in a way that will benefit everybody with lower costs and higher quality of care.

Clearly, e-health is imperative for achieving success in the information-intensive, resource-constrained health-care industry. Progressive players will gain competitive advantage if they embrace and fully integrate the online tools that complement and enhance their business strategy. Those that don’t adopt the tools risk falling behind and losing their competitive edge, as technology continues to transform the health care landscape in fundamental, powerful, and permanent ways.
**Methodology**

The objective of this survey was to develop an in-depth understanding of European physicians’ Internet behavior in 2002 and to track the evolution of e-health in Europe since our last report in January 2001, *Patients, Physicians, and the Internet: Myth, Reality, and Implications*.

For this study, we surveyed 606 physicians in three countries: Germany (254), France (251), and Sweden (101). We chose France and Germany because they are the two largest health-care markets in Europe. We selected Sweden because it is at the forefront of Europe in terms of online penetration among physicians. We chose respondents randomly to represent the overall physician population. For example, 50 percent were general practitioners, and 50 percent were specialists in cardiology, dermatology, obstetrics and gynecology, orthopedics, and radiology.

Independent research companies Sinus Sociovision and Navigare administered the survey between April and July 2002. This report complements BCG’s e-health research in the United States, the findings of which were published in *Vital Signs: E-Health in the United States*, the third report in our Vital Signs series.
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In addition, BCG’s Health Care practice publishes Opportunities for Action in Health Care, articles on topical issues for senior executives. Recent examples include:

- Vital Signs: E-Health in the United States
  A report by The Boston Consulting Group, January 2003

- Vital Signs Update: Doctors Say E-Health Delivers
  A BCG Focus, September 2001

- Vital Signs: The Impact of E-Health on Patients and Physicians
  A report by The Boston Consulting Group, February 2001

- Patients, Physicians, and the Internet: Myth, Reality, and Implications
  A report by The Boston Consulting Group, January 2001

- A Revolution in R&D: How Genomics and Genetics Are Transforming the Biopharmaceutical Industry
  A report by The Boston Consulting Group, November 2001

- Ensuring Cost-Effective Access to Innovative Pharmaceuticals: Do Market Interventions Work?
  A report by The Boston Consulting Group and Warner-Lambert, April 1999

- The Pharmaceutical Industry into Its Second Century: From Serendipity to Strategy
  A report by The Boston Consulting Group, January 1999

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