Hospital Initiatives in Promoting Smoking Cessation*

A Survey of Internet and Hospital-Based Programs Targeted at Consumers

John T. Denny, MD, FCCP; Steven Ginsberg, MD; Denes Papp, MD; George Browne, MS-3; Sharon Morgan, CRNA, MS; Laurence Kushins, MD; and Alann Solina, MD

Study objectives: This study assesses how often local US hospitals provide smoking cessation information in the following two ways: via hospital Web sites; and via routing incoming phone calls to their hospital switchboards to an in-house smoking cessation clinic.

Design: Random survey of US hospitals.

Setting: US hospital Web pages and telephone switchboards.

Patients or participants: One hundred two randomly selected US hospitals.

Interventions: One hundred two hospital Web sites were randomly selected across the United States. The site was searched for the topic of smoking cessation. In the second phase of the survey, the main switchboard number of the same 102 hospitals was anonymously called and the “stop smoking clinic” was asked for.

Measurements and results: The overall results indicate that among the hospital Web sites surveyed, only 30% contained information relating to smoking cessation programs. The phone survey of hospital switchboards showed that 47% had a smoking cessation program available via phone inquiry, while 53% did not.

Conclusions: Of the US hospital Web sites visited, only 30% contained information on smoking cessation. The yield of finding the desired information was increased by the presence of an intrasite search option, which is a low-cost enhancement to any complex Web site. The relatively low cost of promoting healthy behaviors such as smoking cessation on a hospital Web site should be used more widely. Surprisingly, the phone survey of hospitals showed that the lower technology route of providing smoking cessation information to patients via a patient-initiated phone call is only available in 47% of hospitals. Both the Internet and phone-based switchboard referrals could be more widely and effectively used. Joint Commission on Accreditation of Healthcare Organizations guidelines would be one avenue of increasing the availability of smoking cessation information at hospital switchboards and Web sites.

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Key words: Internet; patient education; smoking cessation; tobacco

Abbreviations: ISSO = intrasite search option; JCAHO = Joint Commission on Accreditation of Healthcare Organizations

Of the 50 million smokers in the United States, each year approximately 20 million try to stop.

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In the long term, only about 6% of smokers succeed in quitting. Eighty-five percent of these smokers try
to stop on their own. Patients who are simply advised to stop smoking in a physician’s office have a quit rate of approximately 3 to 9% without any other pharmacologic or psychological support. If a patient is approached at a time of health crisis (e.g., myocardial infarction), the short-term quit rates are 20 to 60%, although most patients relapse without further intervention. Although physicians’ and dentists’ offices are important sites for promoting smoking cessation, they harbor important limitations. Although 70% of smokers report that they want to quit and have made at least one attempt to do so, only about half of current smokers report ever having been asked about their smoking status or urged to quit. Even fewer have been given specific advice on how to successfully quit.

Hospitals have several potential roles in smoking cessation. They serve as portals of entry into the health-care system for many patients without traditional insurance coverage or regular physicians. Hospitals also serve in the continuity of patient care for patients with ongoing medical needs or conditions. Hospitals serve as acute interveners for patients with insurance coverage who pass through their doors for the diagnosis or treatment of an acute condition. Thus, hospitals fulfill many potential roles for different sets of patients. Common to all of these roles is the potential to intervene in freeing patients from their tobacco habits. The fact that the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) requires hospitals to be smoke free creates a window of opportunity for smokers to quit.

In addition, access to smoking cessation programs via hospitals is important because a significant number of smokers come from lower socioeconomic groups and, thus, are less likely to have their own personal physician, let alone easy access to that physician. It is well-known that in lower socioeconomic groups, disproportionately more medical care is obtained in hospital emergency departments than in a less rushed office consultation. Evidence exists that some subgroups of smokers are not reached by, or are not impacted by, conventional means (i.e., a doctors office). Yet, some subgroups would potentially benefit the most in terms of risk reduction and improved quality of life, for example, the occult early COPD patient who may not seek medical attention because of a lack of symptoms.

Many hospitals traditionally have offered health promotion classes with aims such as smoking cessation through community education departments. These classes are accessible to the public via traditional means such as telephoning the hospital and asking for a smoking cessation program. In this study, we determined which hospitals had smoking cessation programs that were available via this traditional approach by anonymously phoning the hospital main switchboard and asking for the smoking cessation clinic.

The Internet is participating in a transformation of business, education, and money management in different forms varying from online stock trading to bill paying. The impact of the Internet on medicine is still in the early stages, but it offers many possibilities, including diagnostics, record keeping, information dissemination, and patient education.

One feature of the World Wide Web is the ubiquitous access to information from around the globe without having to see a physician. Many hospitals are embracing the new medium of the Internet to promote the use of Web pages, which are easily accessible from the next county as well as from around the world, by their institutions. The second portion of this survey examined the same set of hospitals to determine the degree to which traditional smoking cessation programs are featured on hospital Web sites and the accessibility of this information to Web site visitors.

Materials and Methods

One hundred two Web sites were selected randomly across the United States. The Web sites were visited, and the site was noted either for the presence or absence of a “search button” to search within the site only (i.e., an intrasite search option [ISSO]). If such a search button existed, it was utilized to search for smoking cessation within that site. If such a search button was not present, then the site was exhaustively searched by hand and scrolled through, looking for information on smoking cessation.

In the second phase of the survey, the main switchboard number of the same 102 hospitals was anonymously called, and the “stop smoking clinic” was asked for.

Responses were categorized into “yes,” if the hospital had an in-house stop-smoking program available, “no,” if there was none, and “no but referred,” if there was no in-house program but the caller was referred to another specific local program with a phone number.

Discussion

The results of phoning hospital switchboards only showed that slightly less than half (48%) of hospital switchboard operators were able to transfer a “smoker interested in quitting” to a smoking cessation program (Table 1). Among hospital Web sites, less than one third (30%) contained information on smoking cessation programs.

Why information on smoking cessation programs was so hard to come by in US hospitals is not known. Multiple explanations are possible. The hospital switchboard operators directory of hospital services may have been incomplete, the operators may have
been disinterested, or the program may not yet have existed. That 70% of hospital Web sites do not contain smoking cessation information may reflect the fact that promoting smoking cessation is not a priority of the hospital, which may be due to lack of interest, perceived lack of profitability to the hospital, or incomplete indexing of hospital services by the Web site designer. Or, it may reflect the possibility that the hospital does not appreciate the increasing use of the Web by consumers.

The overall results indicate that, among the US hospital Web sites surveyed, only 30% contained information relating to smoking cessation programs (Table 2). Forty percent of the sites visited (41 of 102 sites) had an ISSO, while 60% (61 of 102) did not. When divided into sites with and without an ISSO (allowing for easy searching of the site), 49% of sites with the ISSO had smoking cessation program information, and 18% of sites without an ISSO had smoking cessation program information (Table 3). The much higher yield of smoking cessation programs found in sites with an ISSO suggests that some smoking cessation programs may be missed when visiting Web sites without an ISSO. This suggests that a Web site without a search engine severely limits its own utility by reducing both the ease of use and the ultimate yield of the site. Furthermore, the ease of use in finding information makes the ISSO a significant asset to any site. An alternative explanation is that less well-designed Web sites without an ISSO tended to be less comprehensive and thus lacked information on all or most of the available hospital programs.

The Internet is the fastest growing medium in history, and its utilization among patients is increasing. The number of Americans >16 years old with access to the World Wide Web in a Boston emergency department survey was found to increase nearly 100% in 1 year (1998, 36.3%; 1999, 70.1%).

Income is the strongest predictor of Internet access. Mandl found that an annual household income of < $20,000 was associated with 45.6% Internet access compared with 96.6% Internet access with an annual household income of > $60,000. Between $20,000 and $60,000, there was a linear relationship between annual household income and Internet access. This apparent limitation in Internet access (and access to Web health information) for patients with lower income reflects, to some extent, the decreased opportunities for ready access to health care that are well-known among persons in lower socioeconomic classes.

However, there are several reasons why the Internet may eventually reduce this gap between income and access to health information. One is that the cost of the technology itself is falling so quickly that lack of access to a personal computer is becoming rarer and rarer. In the study by Mandl, the gap between Internet access and no Internet access in the < $20,000 annual household income group narrowed by 17% in just 1 year between 1998 and 1999. Some companies, for example, are giving away basic personal computers with Internet access in return for the user having to view obligatory pop-up banner ads. The availability of devices such as Web TV, which allows for both television viewing and Web browsing, will further enhance Internet accessibility. Free Internet service providers were rare even 3 years ago and now abound (eg, Net Zero.com, and Juno.com). The dot-com crash is affecting some of these and will no doubt affect the degree of free Internet access. The penetration of computer technology into the home will probably parallel that of color television, which is found in 97% of all US homes, including all socioeconomic strata. Internet access to medical information and self-help is especially important in the lower socioeconomic groups because they are less likely to have either a regular physician or easy access to medical care or insurance.
An Internet connection can provide a window to health-care information and preventive care that might otherwise not exist for poorer patients. The literature is clear that there are “best practice approaches” that have been identified for a variety of health issues from ideal preoperative medical screening to asthma treatment and monitoring. The same is true of smoking cessation. It is known by most medical professionals that there are a variety of pharmacologic aids to assist even hard-core smokers in quitting their nicotine addiction that give superior results to the “cold-turkey” approach. The same level of knowledge usually is not achieved by lay smokers, especially those without ready access to medical insurance or medical care. Herein again lies a potential benefit of the Internet in allowing these individuals access to best practices knowledge in beating their nicotine addiction.

Potential problems with this include the possibility of too much patient information for that select group of patients who might be overwhelmed by too many choices. Similarly, information on the possibility of rare side effects to therapy (eg, seizures with bupropion use) viewed alone on the cold, glowing screen of a monitor without the reassurance or perspective of a clinician may dissuade otherwise motivated patients from quitting smoking. Possible solutions include the use of interactive Web site devices such as instant on-screen e-mail or customer support links that allow for the posing of a question electronically, either via e-mail or, even better, in real time. A more canned and prepackaged solution widely used by vendors now is the “frequently asked questions” link to often lengthy lists of questions, which have varying qualities of answers. Ideally, these frequently asked questions can be queried using a search option for a particular keyword or phrase.

Not only do increasing numbers of patients have access to the World Wide Web, but also increasing numbers of adults are retrieving online health information (Fig 1). The US Federal Trade Commission has predicted that the number of US adults retrieving health information online will increase by 70% per year. Physician use of the Internet to retrieve medical information is projected to increase 25 to 43% in the year 2000. Astute hospitals and physicians will use the Internet both to provide information on smoking cessation (and other wellness programs) and to provide “hot links” with which to directly contact the smoking cessation clinic or a physician affiliated with that hospital. This could be accomplished either by the consumer submitting information by e-mail or by retrieving contact information for the smoking cessation program or physician.

These connected patients also will be increasingly motivated to use the Internet for health research. One reason for this is that the average patient will bear an increasing amount of financial responsibility for their health care, due to a relatively flat increase in consumer disposable income over the next 5 years, while bearing a significantly greater proportion of health-care costs (ie, out-of-pocket costs plus any insurance premium) [Fig 2].

Computer-literate consumers use the Internet increasingly to find the best price on a variety of consumer and electronic goods, including automobiles (eg, www.mysimon.com and www.autobytel.com). In the context of rising health costs and the increasing proportion of consumer copays with relatively flat consumer disposable income, it is logical to expect increasing consumer use of the Internet for health and health insurance reasons. These factors are one of the reasons behind the dramatic growth in large commercial Web sites dedicated to health (eg, www.webmd.com and www.medscape.com).

The education level of Internet users is an important consideration for hospital Web site designers. A very basic Web site that is written for a sixth grade reading level may drive away highly educated persons by appearing to be unsophisticated. A sophisticated Web site written at a college graduate reading level will be effective in communicating to that highly educated population but may alienate consumers with less than a high school education. This is a real concern in promoting smoking cessation programs because it is possible that the still-smoking population may have a lower educational level than the nonsmoking population. The best approach for health information Web sites is not clear. Possible solutions include a heading with basic information (eg, nicotine patches) with a radio button to click labeled “for advanced information.” This approach does not, however, completely solve the problem of differences in reading levels because the consumer reading at a sixth grade level will be frustrated if they want to read the advanced information. One eventual solution will be multiple versions of the same Web page that would be written at different reading levels. The particular version to be displayed to a specific consumer could be chosen either overtly by the consumer or subtly deduced by the server relying on a neural network that processes the viewer’s previous choices. Such mass customization will be more workable as the cost of software scripts and memory continue to fall.

The educated consumer is one of the driving features to consumer Internet use as the population of college-educated, computer-literate consumers with high disposable incomes will more than double between 1978 and 2005, according to the Institute for the Future 2000 (Fig 3).
Another factor driving the empowered consumer to use the Internet in researching their medical care is the number of Web sites providing quality and performance assessments to patients (e.g., www.healthgrades.com, www.consumer.checkbook.org, and www.jcaho.org). These and similar sites are predicted by many to drive a search by empowered, enlightened, computer-literate patients to quality health-care providers (i.e., managed-care plans, hospitals, and physicians).

This study did not address the quality of information found relating to smoking cessation. There is evidence that a significant amount of medical information found by consumers on the Web is inaccurate, if not misleading. One study of rheumatoid arthritis Web sites found that 51% of the sites visited were authored by for-profit industries and 43% were advertisements. The potential for bias among sites sponsored by organizations with vested interests is significant.

Beyond the quality of Internet health information, another issue is the impact that such information has on the life of the health-care consumer after viewing it. To date, there is little information on how health information gleaned from the Internet will affect patient behavior or the use of medical care. This survey was performed to highlight the availability of tangible smoking cessation programs that are offered through hospitals to the public and are promoted through hospital Web sites or hospital telephone switchboards. Hospital Web sites were examined to see whether they publicized a smoking cessation program at the hospital. In contrast, online smoking cessation programs are a new avenue with which to reach consumers that are increasingly being offered. Our study did not seek to evaluate online smoking cessation. In fact, none were encountered during our survey of Web sites. These online smoking cessation programs exist wholly or in part in cyberspace. Often, they are an interactive questionnaire via the Internet that will shape suggested interventions based on some variation of the Fagerstrom score or a scale of nicotine dependence. As an online tool, these programs do not require, at least initially, the consumer to leave their computer screen to start the process of quitting smoking. These programs are potentially exciting because no other approach allows for perhaps tapping into the potentially huge pool of smokers who are in the prequitting or contemplative stage of quitting. Skillfully done, these online programs potentially have the ability to subtly shape smokers’ perceptions of smoking and enhance their motivation to quit. These online programs are increasingly being offered through state governments, usually using some of the monetary fruits of the settlements of tobacco lawsuits against tobacco manufacturers by states attorneys general. The American College of Chest Physicians was a pivotal contributor and friend of the court in the tobacco lawsuits. Since online smoking...
cessation programs are so new, it is too early to
determine the cost/value data. However, since the
marginal cost of such software will be low to subse-
quently users after the initial programming, it will
likely be attractive. This computer program develop-
ment cost could logically be aggressively lowered by
state governments cooperating and pooling costs.
This is an exciting area that will bear future exami-
nation.

Only 30% of hospital Web sites visited contained
information on smoking cessation. This percentage
of sites is disappointingly low especially considering
the relatively low cost of providing publicity regard-
ing smoking cessation in cyberspace. This argument
assumes that the hospital already has either a Web
page or the intent to develop one. In the initial
hospital Web page creation, an insignificant amount
of additional Web page development would be
needed to add a mention of a smoking cessation
program that is relevant to the particular hospital.
The space could range from a simple phone number
for the program or a doctor’s office, to a linked Web
site, to a more elaborate, multiple-page description
of the programs that are available. Thus, the actual
cost to the hospital is minimal, while the possible
public health benefits are large. The phone survey
results showed that, of all hospital switchboards
contacted, 47% were able to connect an anonymous
caller to a “stop smoking clinic or program.” Of the
53% of hospital switchboard operators who did not
refer inquiring persons to an in-house program, 6%
(six switchboard operators) did provide a specific
referral to a city or regional program with a phone
number for that program. The 47% positive response
rate using for telephone inquiries compared to the
overall 30% positive response rate using hospital
Web sites partly reflects the slower embrace of the
World Wide Web by hospital public relations offices
compared to utilizing the telephone switchboard.
One appeal of hospital Web pages is that many
different program offerings of the hospital can be
promoted simultaneously. These listings can be quite
comprehensive and encyclopedic, if desired. The
presence of an ISSO allows for the easy locating of
programs by the consumer/patient who has a limited
amount of time to search.

Among the hospital Web sites previously dis-
cussed, of the 31 hospital Web sites with mentions
of smoking cessation programs, 23 of 31 (74%) also had
positive responses to phone inquiries about smoking
cessation programs. Whereas, of the 71 hospital Web
sites that did not mention smoking cessation pro-
grams, only 25 of 71 (35.2%) had positive responses
to phone inquiries about a smoking cessation pro-
gram. Thus, hospitals that have smoking cessation
programs and that publicize their programs via their
Web pages also tend to do so using internal phone
directory information supplied by their hospital
switchboard operators. Or, hospitals that promoted
smoking cessation well tended to do so in more than
one medium, while ones that did not promote it well
tended not to promote it in either medium. This
finding is troublesome because it suggests a relative
de-emphasis of the importance of promoting smok-
ing cessation programs on all fronts at a particular
hospital. Whether this lack of emphasis is paralleled
in other spheres of the hospital, such as the treat-
ment of inpatients, is unknown and needs further
research.

Certainly, patients, especially inpatients, are an
important group to target in smoking cessation ef-
forts. Patients with a newly diagnosed condition or
with a suspected diagnosis are more likely to be more
attentive to discussions of their smoking habits and
to be receptive to ways to conquer it. Hospital
outpatients are also potential targets for smoking
cessation programs. The lack of such programs de-
prives the patient of ready access to information on
smoking cessation programs. What may be of more
concern is the message implied by the absence of a
messenger. That is, what substantive efforts are
being made to promote smoking cessation to inpa-
tients and outpatients if there is no information
available to phone callers or to visitors to the Web
site of the hospital. Perhaps by making the docu-
mented presence of smoking cessation programs a
condition of an accrediting body such as the JCAHO
availability of smoking cessation programs could
be enhanced. For example, by making it a require-
ment for accreditation, the JCAHO succeeded in
making all accredited US hospitals smoke-free.20

Hospitals that are creating or modifying Web sites
hopefully will include information that both encour-
ages smoking cessation and promotes easy access to
a smoking cessation program. Any hospital Web site
benefits from the inclusion of an ISSO to allow the
harried consumer ready access to all that hospital has
to offer within the Web site of that hospital. Hospi-
tals also may wish to link other disease-specific terms
to their smoking cessation site so that consumers will
have added opportunities to be directed to that site.
This is also beneficial because many consumers
perform disease-specific searches, for example, look-
ing for information on COPD. This allows a hospital
also to use their smoking cessation program as a
marketing tool. Any related services might be linked
or promoted here as well (eg, the availability of
helical CT scanning as a screening device for the
presence of early lung cancer in smokers or the
availability of spirometry screening).

In conclusion, more research on the current role
of hospital efforts in promoting smoking cessation is

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needed. Especially important is identifying both the efficacy of different approaches and their cost-effectiveness in promoting smoking cessation. This survey identified the fact that the efforts of US Hospitals could be significantly improved in making smoking cessation programs more visible, and thus more accessible, to consumers. Some improvement hopefully will occur with Web site improvements and upgrades by hospitals. Progress could be encouraged by the JCAHO adopting minimal standards for hospital efforts in encouraging smoking cessation. The addition of an ISSO increases the efficacy of hospital Web sites in accessing smoking cessation information.

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