MEDINFO 2007
HISA Ltd Australia
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The New Digital Divide: Bridging the Gap Between Patients and Practice

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Abstract

Introduction*: This paper examines a new digital divide between patients and health care professionals in the context of emerging Information and Communication Technologies (ICTs).* ***Methods:*** *Through a survey of Staff Oncologists, Fellows and Residents, this study examines how the Internet is currently being used in clinical practice, research and continuing education. This study also probes the physician's view of the benefits and barriers of the Internet as a resource for their patients.* ***Results:*** *Analysis revealed that a large majority consider the Internet as essential to their practice and see its use increasing in the future, but have reservations about adopting new paradigms for clinical care.* ***Conclusions:*** *Though nearly all physicians recognize the benefits the Internet offers to patients, few are integrating new technologies such as email communication with their patients into their clinical practice.*

Keywords:

internet, consumerisms, radiation oncology practice, information and communication technologies

Introduction

A new digital divide is emerging. This new divide is between what patients are demanding from new technologies, and what professionals and organizations are prepared to provide. Many patients are becoming sophisticated consumers of health care services and just as they utilize new technologies in almost every other facet of the life, there is an expectation that health services also adopt a paradigm appropriate for the knowledge age. At the same time, health professionals are adopting these technologies in their own lives, but are reluctant to provide care utilizing these technologies. This reluctance is creating a chasm between the health system and health consumers. It is a chasm they are not certain how to bridge and reluctant to cross.

There is little doubt that that the prevalence of Information Communication Technologies (ICTs) and a wealth of information on the Internet is having a profound effect on clinical practice. The amount of information available to clinicians and their patients can be overwhelming, confusing and difficult to process. Developing strategies for dealing with this information explosion is essential if this information is going to have a positive, rather than negative effect on the clinical encounter[1] .

Many doctors use the Internet in their own practice for a variety of uses including obtaining medical information from online journals and e-mailing colleagues.[2] Continuing education/continuing medical education (CE/CME) programs that adopt self-directed, computer-based instruction formats via the Internet or CD-ROM can ease the demands placed on clinicians who are required by licensing boards to accumulate CE/CME credits as part of their career-long learning [3]. Having CE/CME courses on the Internet creates a flexible learning environment; the information in the courses is updated easily, time away from the workplace is reduced, and the learning can happen at the individual's own pace.[3-5]

The advent of ICTs has also had a profound effect on the delivery of care; patients are accessing information and educational tools and resources that have the potential to empower them as active participants in their care. As Shaw has noted, health care professionals appear to have a great deal of trepidation about what impact the "expert patient" could potentially have on clinical practice: "The suspicion is that for many doctors, the expert patient of the imagination is the one clutching the sheaf of paper from the internet, demanding a particular treatment that is unapproved, manifestly unsuitable, astronomically expensive or all three [6]."

The discipline of radiation medicine is inherently driven by computer-based technologies that profoundly shape the ways in which care is delivered. Yet it is not clear that the experience with computer-based technologies, depended upon for the provision radiation based treatments, extends to other aspects of the clinical interaction. This study will examine the perceptions, attitudes and barriers for radiation oncologists incorporating ICTs into their practice to improve the access to and the delivery of quality patient care.

Rationale/Purpose

To conduct a study of Radiation Oncologists at a large, academic, comprehensive cancer centre to determine current attitudes towards the Internet as a component of health care delivery, and to explore attitudes related to increased integration of Web-based applications and resources into the practice and delivery of radiation medicine.

Methods and materials

This study focused on the impact of the Internet on the practice of radiation therapy from the radiation oncologists' viewpoint. Radiation oncologists were surveyed to explore to what extent they use online resources for their own professional education and their attitudes towards further integration of Web-based strategies for patient education and care delivery into their clinical practice.

Study design

The survey instrument contained 18 items as well as demographic questions pertaining to age, sex and professional status. The questionnaire was divided into three sections. 1) The impact of the Internet on the education and practice of radiation oncologists. 2) The current reliance on the Internet to provide clinical services to their patient. 3) The oncologists' perceptions of the potential impact on clinical practice of patients using the Internet for education and clinical purposes. The questionnaire was pre-tested for face validity with three oncologists. Modifications to clarify and improve questions were made based on the feedback.

All radiation oncologists as well radiation oncology fellows and residents at a comprehensive cancer centre were eligible to participate in the study; at the time the survey was administered, there were 64 potential participants. The survey was initially administered in paper-format, but was also made available through an online version.

University Health Network Research Ethics Board approval was obtained for this study.

Results

Demographics

A total of 51 respondents completed the questionnaire for a response rate of 80%. Half of the respondents 49% were staff oncologists, 31% fellows and 20% residents. Just over half 60% were male; 54% are between the ages of 21 and 40 and 44% between 41 and 60. The respondents specialized in a wide range of cancer sites; the most common sites of specialization were breast cancer (24.5%), gastrointestinal (24.5%), genital-urinary (30.6%) and head and neck (20.4%).

The Internet and clinical practice and education

Three-quarters (75%) of the respondents perceived the Internet as essential and 24% as important to their clinical practice. All respondents have network access at work and 90% have home Internet access. The majority of respondents 81% consult online practice guidelines. Only 57% of respondents reported using the Internet to research new medications; trainees, however, appear to be more likely to use the Internet for this research with 90% of the residents, 75% of the fellows and 32% of the staff oncologists reporting researching medications online (See Table 1).

The Internet was also used by respondents for collaborative activities including clinical consultation, research and the review and publication of research manuscripts. The majority (92%) stated that they email colleagues for clinical advice or referrals. Many of the respondents (69%) use online avenues for improving international collaboration, but only 22% are currently conducting online meetings or conferences. Over three-quarters (78%) use the Internet to collaborate on research projects; this includes 30% of the residents, 81% of the fellows and 76% of the staff oncologists. Online publishing of their research and reviewing manuscripts, was done by 76% of respondents.

Table 1 - How do you use the Internet?

	Oncologist	Fellow	Resident
Accessing medical journals	24 (96%)	16 (100%)	10 (100%)
E-mailing colleagues	25 (100%)	13 (81%)	9 (90%)
E-mailing patients	11(44%)	4 (25%)	1 (10%)
Checking info on Web sites	9 (36%)	10 (63%)	7 (70%)
Researching new medications	8 (32%)	12 (75%)	9 (90%)
Looking for practice guidelines	19 (76%)	13 (81%	10 (100%)

The majority of respondents believed that the Internet usage will continue to increase as part of the clinical practice (80%), research (87%) and education (80%). Over half of the respondents (60%) see themselves using the Internet for telemedicine and 58% think they will use the Internet for online training or teaching of students. Thinking to the future, 77% of respondents see themselves using the Internet for online conferences, and 67% think they will use the Internet for formal online learning and distance education. All most all the respondents (90%) believe that the Internet will continue to be important for promoting their academic activities and research.

Patient-physician communication online

The majority of oncologists do not encourage patients to communicate with them using email. Approximately one-third (31%) of respondents use the Internet to email patients and only 33% would like patients to have the ability to email them concerning their treatment: 50% of the residents want to have this ability, 25% of fellows and 32% of the staff oncologists. Email exchange was rarely or never encourage by 73% of respondents. However, half of the respondents include their email address on their business cards and 59% are interested in having a separate email account dedicated to exchanging email with patients that are related to the clinical encounter.

Patients on the Internet: Physician perspective

Respondents believe that patients benefit from accessing information online, with 81% stating the online information is somewhat helpful to patients. According to the respondents, 96% of patients sometimes (47%) or often (49%) bring information that they have found on the Internet with them to their appointments. More than half (61%) report referring patients to information on the Internet. Although a few respondents referred patients to common search engines such as Google™, the majority referred them to specific, well-known sites including the National Cancer Institute's (NCI) education database (PDQ™), the American and Canadian Cancer Societies and Cancer Care Ontario. Only 51% of respondents reported checking and/or assessing information on popular Web sites for patients.

More than half (61%) of respondents agree or somewhat agree that patients should research their condition on the Internet before they accept treatment recommendations and 78% agree or somewhat agree that patients who do Internet research before their clinical consultations are better informed about their options than those who do not. The majority (80%) also agrees that patients who come with information that they found on the Internet generally take more time during consultation and 78% agree that these patients often request treatments not offered in Canada. However, almost half of the respondents (47%) do not believe that patients who do research on the Internet have a better consultation with their physicians than those who do no research prior to the appointment. There is also general agreement that the Internet is not being used to its full advantage as a patient tool for clinical care at the cancer centre.

Limitations

Despite the fact that the Princess Margaret Hospital houses the largest Radiation Oncology program in Canada, and despite the fact that this study enjoyed an 80% response rate, the numbers dealt with in the survey (n = 51) are still quite small. Such a sample size does not allow for the accurate extrapolation of information based on professional status and demographics. This study took place at only one, academic cancer centre involving only radiation oncologists, fellows and residents. The opinions and perspectives gathered, therefore, cannot be considered representative of radiation oncology practice in general or for larger physician populations.

Discussion

Communication with patients via e-mail

An overwhelming majority of respondents in this study stated that the Internet is essential to their clinical practice and education. However, the use of the Internet for patient communication and education lags behind other aspects of online activities for radiation oncologists. Very few physicians (33%) would like their patients to be able to e-mail them directly. This reluctance to correspond through e-mail could be due to a number of factors. The most obvious of these factors is time. Other important factors may include the already large number of e-mails received daily, the inability to effectively bill for time spent e-mailing patients, the dangers of e-mail reliance in urgent cases, the lack of a system to document patient e-mails in their medical record and issues of confidentiality,.

Despite the hesitations felt in regards to patient e-mail, several factors will make the adoption of such systems inevitable: (1) these technologies are becoming common place in every other industry; (2) a growing number of patients are expecting to be able to use these technologies to manage their health care; (3) these technologies can potentially promote self-managed care in areas such as chronic diseases and (4) these technologies have the potential to improve the delivery and accessibility of health care [7, 8] .

The Internet as a patient education resource

A concern amongst physicians for patients seeking health information on the Internet is the accuracy, reliability and appropriateness of the information they receive [9]. Patients would more likely trust resources recommended by their doctor [10], but a surprisingly large number of oncologists (40%) rarely or never do so. Many staff do point their patients in the direction of reputable sites such as the Canadian Cancer Society (www.cancer.ca), the American Cancer Society (www.cancer.org) and the National Cancer Institute (www.cancer.gov), but our respondents also acknowledged that, the Internet is not being used to its full potential as an educational resource at the Princess Margaret Hospital.

Concerns about the digital divide

There is a growing concern among physicians about the possible ramifications of responding to patients' demands for online interactions. This paradigm shift could potentially create barriers to care for certain patient populations. Shaw's study *How the Internet affects patients' experience of cancer: A qualitative study* shows that significantly fewer elderly patients access the Internet for medical information (Shaw, BMJ 2004). Even those who are able to access the Internet may not wish to do so for obtaining medical information. Henwood argues that with increased information and empowerment comes increased responsibility (Henwood, Sociology of Health and Illness, 25:6, 2003) [11]. He asserts that many patients are more than happy to trust their doctors and leave decisions to them. This resistance, on the part of providers towards adopting a more wide spread use of ICTs, could in part explain the reluctance of our respondents.

While some may argue that providing communication and information options on the Internet neglects non-users such as the elderly, few would agree that withholding such options from those who could take advantage of them would be a suitable practice. The goal of any health care organization should be to provide their patients with as many options as possible to increase their understanding of their disease and treatment. The Internet should not be seen as a replacement to traditional forms of information gathering and communication but rather as a complement to them.

The Internet's role in professional development

Though not every radiation oncologist surveyed in this study supported the Internet as a means of patient communication or education, nearly all agreed on its value to their professional development. The Internet has become an integral part of professional development, research and peer communication. In fact, 75% of respondents said that the Internet was essential to their practice and education and all but one said it was at least important.

The next generation of oncologists

Although the low number of participants prevents tests of statistical significance, the trends suggest there is no difference in the way that residents and fellows are using the Internet for clinical services. However, there do appear to be a few notable exceptions. Residents and fellows appear to be searching for new medications online more than staff oncologists. They also seem to spend more time on the Internet checking or assessing information on popular websites for patients. As for their own professional development, staff and fellows are much more likely to use the Internet to review or publish manuscripts than residents and are also more likely to go online to improve international collaboration. This result is, of course, in line with regular career development for radiation oncologists. In the future, fellows and residents see themselves participating in formal online learning much more than the staff and are also more likely to involve themselves in telemedicine and online consulting. Despite these few differences, staff, fellows and residents have similar opinions on the current and future roles of the Internet in their careers and professional development.

Conclusions

While physicians have realized the potential for the Internet in their research and professional development, the potential in their clinical practice is not being realized. Although evidence shows that having better informed patients should have a positive impact on their experience, the emergence of the expert patient also means a change in the way clinicians approach a patient's clinical care. In order to better accommodate the expert patient, physicians need to take an active role in examining the information available to patients on the Internet and steer their patients towards reliable, accurate and relevant sites. New systems and approaches need to be developed to assist oncologists in bridging this new emerging gap between patient expectation and current practice.

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