# The Internet as a Potential Source of Information About Radiological Procedures for Patients

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The purposes of this study were to determine what percentage of patients in a typical radiology outpatient setting own or have access to a computer with internet capabilities and how many of these patients would find an educational radiology website useful. During a 3-month period, surveys were given to all adult outpatients undergoing computed tomography. The survey asked 4 questions: (1) Do you own a computer?, (2) If you own a computer, does it have Internet access?, (3) If you do not own a computer, do you have access to a computer with Internet capabilities?, and (4) If we provide helpful information regarding preparation for and the conduct of various radiological procedures on the Internet, would you use it? Four hundred surveys were collected. Two hundred one of the respondents (50.3%) owned a computer: 189 of the 201 (94.0%) had internet access on their computer or had access to another computer with Internet capabilities. One hundred ninety-nine of the 400 respondents (49.8%) did not own a computer, 57 of these (28.6%) had access to a computer and the Internet. Of the 246 of those with Internet access, 205 (83.3%) indicated that they would use a website that provided helpful information regarding radiological examinations. The Internet is an excellent resource for educational information for patients about various radiological procedures. This study showed that 61.5% of patients had access to the Internet, and 83.3% of these would use such a site. It is likely that these numbers will increase with the rapid growth of the Internet and the steadily increasing number of homes with computers.

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**KEY WORDS: computers, education, Internet.** 

M ILLIONS OF PATIENTS undergo radiological examinations each year and are understandably anxious and confused about the different tests for which they are scheduled. Over the years our radiology department has attempted to alleviate some patient anxiety by providing pamphlets to patients and referring physicians. However, this is not an efficient way to disseminate information. In addition, radiological examinations and how they are performed are constantly changing, and even referring physicians often do not fully understand what each study entails.

The worldwide web offers an excellent opportunity to supply patients with information about radiological tests, study preparations, complications, etc. However, first it is essential to determine what percentage of people would be able and/or interested in accessing such information. Unless patients are willing to use such information, there is no point in developing such a website.

The purposes of this study were to determine what percentage of patients in a typical radiology outpatient setting own or have access to a computer with Internet capabilities and to determine if these patients would find an educational radiology website useful.

#### MATERIALS AND METHODS

During a 3-month period (February 1999 through April 1999), questionnaires were given to all adult outpatients undergoing computed tomography (CT) at our institution. The questionnaire asked 4 questions requiring yes or no answers: (1) Do you own a computer?, (2) If you own a computer, does it have internet access?, (3) If you do not own a computer, do you have access to a computer with Internet capabilities?, and (4) If we provide helpful information regarding preparation for and the conduct of various radiological procedures on the Internet, would you use it?

The questionnaires were given to patients in the CT waiting room and were collected by the technologist at the time of examination. The technologist assisted patients with the questionnaire if necessary and checked that all the questions were answered. To avoid potential bias, the authors of this report did not interact with the patients.

## RESULTS

Four hundred surveys were collected. Two hundred one respondents (50.3%) owned a computer. 189 of these (94.0%) had Internet access on their computer or had use of another computer with worldwide web capabilities. One hundred ninetynine of the 400 respondents (49.8%) did not own a computer. However, 57 of those (28.6%) had access to a computer and the Internet. Therefore, 246 of the 400 respondents (61.5%) either owned or had access to a computer with Internet capabilities. Two hundred five of those with Internet access (83.3%) indicated that they would use a website

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that provided helpful information about radiological examinations and procedures.

#### DISCUSSION

Millions of patients undergo radiological examinations each year in this country. At our institution alone, more than 300,000 such examinations were performed last year. This number increases annually.

Patients are often anxious about the examination for which they are scheduled and typically are given little information about radiological tests by the referring clinician. Like many institutions, we make pamphlets available to referring physicians and patients regarding various radiology examinations. However, this is not an efficient method to disseminate information to a large number of people. Patients routinely arrive in the department with no information about the study and without proper preparation (ie, not NPO, no bowel preparation, no steroid preparation for patients allergic to IV contrast, etc). This results in unnecessary delay and rescheduling of many examinations. With continuous advances in radiological technology, even referring physicians are confused about many radiological studies.

The worldwide web is an excellent educational tool and is already being used as a resource for radiologists, radiology residents, and radiology administrators.<sup>1-4</sup> It also provides an excellent opportunity for patients to obtain information about various radiological examinations and procedures,

as home computers are now commonplace and computer access is also possible at local public school and libraries. In addition to the wide availability of home computers, access to the Internet continues to increase. A recent Internet tracking poll showed that more than 75,100,000 Americans have used the worldwide web.<sup>5</sup>

The worldwide web offers the ideal opportunity to supply patients with information about radiological tests, preparations, complications, etc. Our long-range goal is to design an easy-to-use website (virtual radiology department) where any interested patient or health care professional can access information about a wide variety of radiological tests. For example, a patient scheduled for a CT scan could access information such as (1) how the CT scanner works, (2) the necessary preparation for a CT scan, (3) an explanation of intravenous contrast agents and the associated risks, (4) the amount of radiation to be given, and (5) view sample CT images.

However, before beginning such an endeavor, it was important to determine the need for such information. This study of patients undergoing CT scans in a typical outpatient setting showed that 61.5% of patients had access to the Internet and that 83.3% of these would use such a radiology information site. It is likely than these numbers will increase with the rapid growth of the Internet and the steadily increasing number of homes with computers.

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