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Patient-Physician E-Mail Communication Revisited a Decade Later: an OKPRN Study

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ABSTRACT

In private community-based primary care practices in Oklahoma, approximately two thirds of patients now have access to a computer and e-mail either at home or work. A substantial majority would like to use e-mail to communicate with their primary care clinicians. Since 1997, rural patients have caught up with urbanites in their access to computers.

INTRODUCTION

The Oklahoma Physicians Resource/Research Network (OKPRN), established in 1994, is a practice-based research network that includes 233 clinicians in 107 practices located throughout Oklahoma. A primary purpose of the network is to provide community health care providers with access to information, education, research, and newer technologies. In 1996, OKPRN clinicians wanted to know what proportion of their patients had access to computers and e-mail. A study was completed in 1997 and published in the *JOSMA* showing that rates of computer access ranged from less than one-third in rural areas to almost two-thirds in urban practices.[1] Since ten years had passed, the need existed to repeat the study, using the same methods, to see what if any changes had occurred in the interim. To make comparisons more reliable, at least one clinic in each type of area (metro areas, mid-sized cities, and rural) took part in both 1997 and 2007.

METHODS

The study was approved by the Institutional Review Board of the University of Oklahoma Health Sciences Center. Nineteen OKPRN members (17 primary care physicians and two primary care nurse practitioners) took part in this study, which was conducted between October of 2007 and March of 2008. Each was given 100 numbered paper surveys with instructions and a study protocol. They were asked to provide the surveys to 100 consecutive patients age 18 and over (or the parent accompanying patients younger than 18) at the time of their scheduled visit. Specific individuals in each office were trained and charged with seeing that the protocol was accurately followed. Patients were told the purpose of the study and were given the option to anonymously decline participation.

Those willing to participate answered the five "Yes" or "No" questions shown in **Table 1**. Patients were asked to return the surveys to a clearly marked and sealed (except for a small slot in which to place the survey) box at the front desk of each clinic, whether or not they chose to answer the survey questions. Twelve (12) percent of the surveys were either not returned (2%) or were returned blank (10%). Data collection occurred between October 2007 and March 2008.

Percentages were calculated for each of the five questions. In addition, we calculated the percentage of patients reporting current or anticipated e-mail access who were interested in using e-mail to communicate with their physician. Percentages were calculated for each clinic, for each city, and for urban (>100,000 population), mid-sized town (25,000 to 100,000 population), and rural settings (< 25,000 population).

RESULTS

A total of 1700 patients completed the survey. The overall participation rate was 89%. No clinician enrolled fewer than 74 patients. The percentages of patients answering "Yes" to each of the five questions are shown in **Table 2**, grouped by practice location. Also shown are the calculated percentages of patients who currently have e-mail or plan to get it within six months that would like to use e-mail to communicate with their physician.

Among all patients who completed surveys, 66% had a computer at home, 45% used a computer at work, and 72% had a computer either at home or at work. Overall, 64% had access to e-mail, and, of those, 91% said they would like to be able to use it to communicate with their doctor. Of those patients who did not currently have e-mail access, 26% planned to obtain it within the next six months. Among all patients who currently had or planned to get e-mail, 80% want to use e-mail to communicate with their doctor.

Table 1. Survey Questions

1.	Do you have a computer in your home?
2.	Do you use a computer at work?
3.	Can you send and receive electronic mail (e-mail)?
4.	Would you like to have the capability of communicating with your physician through e-mail - for example, appointment reminders, lab results, or other health information?
5.	If you do not presently have access to e-mail, do you plan to have access within the next 6 months?

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Table 2. Percentages of Respondents Answering Each Question in the Affirmative, Averages by Type of Area

Location	Number of completed surveys	Average number of surveys completed, per clinic	Home computer	Work computer	E-mail access	Want e-mail access to provider	Plan to get e-mail in 6 months	Have or plan to get e-mail AND want e-mail access to provider
Metro Areas	785	87	65%	45%	65%	60%	31%	82%
Mid-Sized Cities	186	93	64%	44%	66%	57%	19%	83%
Rural	729	91	68%	45%	63%	56%	25%	78%
Overall	1700	89	66%	45%	64%	58%	26%	80%

Home computer use across locations was fairly consistent with averages of 65% in metropolitan areas, 64% in mid-sized cities, and 68% in rural towns. Likewise, there were no remarkable differences between types of areas with respect to computers at work, access to e-mail, intention to obtain e-mail service, or preference for use of e-mail to communicate with physicians. Patients seen in teaching practices generally had lower rates of computer use than those seen in non-teaching practices (61% versus 77%).

While the proportion of urban patients with home computers and access to e-mail increased compared to a decade ago (10% and 17% increases respectively), the increases seen in mid-size cities and rural areas were remarkable. The proportion of patients in mid-sized cities with computers in their homes increased from 36% to 64%, and e-mail use increased from 30% to 66%. In rural areas, the proportion of patients with computers at home increased from 28% to 68%, and e-mail use increased from 21% to 63%. As a result, in 2008, the proportion of patients with access to computers and e-mail had equalized across all locations.

Three practices participated in both studies. In one metropolitan practice, 89% of patients used a computer at home in 2007 compared to 61% in 1997, and 89% had access to e-mail in 2007 compared to 53% in 1997. In a rural practice, 86% used a home computer in 2007 and 71% had e-mail in 2007 compared to 40% and 36% in 1997. The most dramatic changes were seen in a rural practice located in a town with 3,000 residents. From 1997 to 2007 the proportion of patients surveyed who had computers in their homes increased from 18% to 73%, and the proportion of those with e-mail access increased from 14% to 71%. The proportion of patients in this small town who had e-mail and wanted to use this medium to communicate with their physician more than doubled, from 32% in 1997 to 77% in 2007.

DISCUSSION

Our data show that the proportions of patients with home computers and e-mail access are now similar in urban, suburban, and rural areas of Oklahoma. This represents a significant change since 1997. A large majority of patients surveyed within our network continue to express a desire to use e-mail to communicate with their physicians.

Although the proportions of patients within our network who have access to computers and e-mail were higher than many of our member physicians thought, our overall averages are still lower than national estimates. In April 2006, the United States Census Bureau reported that 81% of Americans were regular Internet users and that 91% of those who used computers also regularly used e-mail.[2] Additionally, 80% of those with access reported that they had recently used the Internet to find health information.[3] Of all patients will access, 90% reported that they would like to communicate with their clinician electronically.[4]

Based on the knowledge gained through this project, more of our network members plan to make greater use of practice websites and make efforts to document patients' e-mail addresses. This could facilitate a variety of communications in the future. Practical examples include notices regarding flu vaccine availability, instructions for home care, circulation of clinic newsletters and tips for healthy living in addition to electronic visits.

Table 3. Summary of 1997 Results Percentages of Respondents Answering Each Question in the Affirmative, Averages by Type of Area

Location	Home computer	Work computer	E-mail access	Want e-mail access to provider	Plan to get e-mail in 6 months	Have or plan to get e-mail AND want e-mail access to provider
Metro Areas	55%	57%	48%	68%	11%	89%
Mid-Sized Cities	36%	43%	30%	44%	7%	82%
Rural	28%	38%	21%	45%	13%	87%

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