Implementing Electronic Mail in the Nurse Practitioner’s Office: Considerations for Clinical Practice

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Citation:

Abstract

Studies have shown that patients are interested in communicating with their health care providers via electronic mail (e-mail). This computer application, however, has not been widely adopted by the nurse practitioner (NP) (Dumas, Dietz and Connolly, 2001).

A review of literature was undertaken to better understand the current benefits and barriers of e-mail between practitioners and established patients. This article identifies the top four benefits and barriers encountered by health care providers and offers practical guidelines for use by the NP as well as the patient when considering e-mail as a tool for communication.

Benefits included: (1) Feeling of social support, (2) Management of chronic diseases, (3) Increased patient satisfaction, and (4) Increased convenience. Barriers included: (1) Reimbursement eligibility issues, (2) Time constraints experienced by the practitioner, (3) Decreased perception of emotive cues, and (4) Patient privacy considerations.

Keywords: E-mail, Nurse Practitioner, Patient Communication, Computer Technology, Clinical Practice
Introduction

The internet is a powerful tool for communication in the world today. Business transactions such as online banking and stock exchanges are now at the fingertips of homemakers and executives alike. Large corporate health care organizations as well as individual health care practitioners access the Internet every day in order to optimize patient services and outcomes. Electronic mail (e-mail) and Internet websites, are examples of computer-enabled tools used by practitioners to facilitate communication with both patients and professional colleagues. The use of e-mail by the nurse practitioner (NP) in the clinic setting can be a useful tool for connecting with established patients. Defining terms is important because e-mail between a patient and provider is different from e-mail for personal or casual communication. Patient-provider e-mail is defined as computer-based communication between clinicians and patients within a contractual relationship in which the health care provider has taken on an explicit measure of responsibility for the client’s care (Sittig, 2003).

Although e-mail is widely accepted as a communication tool, clinic practitioners encounter unique barriers as well as benefits when implementing and using e-mail for communication with existing patients.

Background and significance

Ray Tomlinson programmed and sent the first e-mail message in 1971. Widespread use by the public began in the 1990s and is currently an integral part of daily life for people around the world. The popularity of e-mail stems largely from its user friendliness, efficiency, and versatility in facilitating asynchronous communication (Car and Sheikh, 2004). Studies show that many people are interested in Internet-based technology that enables them to control their own health care. As a result, services such as self-assessment tools and secure patient-caregiver e-mail communication are evolving rapidly (Nijland, 2008). In order for provider-patient e-mail to be widely accepted in health care, it must provide a positive provider-patient communication experience, enhance clinical outcomes, be convenient for both parties, offer reimbursement options, address legal concerns and empower patients (Freed, 2003).

E-mail use between the clinic NP and patients has the potential to increase patient satisfaction and lower the cost of health care (Car and Sheikh, 2004). Furthermore, as the
patient/NP ratio continues to rise, it is important that the NP utilize tools such as e-mail to manage time and office processes more efficiently. Forces which drive or restrain the use of computerized tools such as e-mail in today’s health care society are identified below.

**Driving/Restraining Forces**

Driving forces for the implementation of e-mail use in the clinic setting include patients who have been shown through research to be interested in communicating with their health care providers via e-mail; practitioners who are currently utilizing this innovation as a clinical communication tool; and the health care industry as a whole in its attempt to move forward with the use of computer applications to decrease cost, improve clinical efficiency, and maximize patient clinical outcomes. Patient satisfaction is a top priority as well as increased convenience and office efficiency for both the patient and the provider.

Restraining forces include the practitioners’ knowledge deficit and lack of comfort with using e-mail to communicate with patients, and therefore resistance to the innovation.

Since the first questions most administrators ask are what is the cost and what is the benefit when evaluating the cost/benefit ratio, the monetary cost of implementing e-mail in the clinic must be calculated. Depending on the needs of each clinic, these costs may include computer hardware, internet service fees, encryption software, virus protection, firewalls, and personnel training to name a few. Just as driving/restraining forces affect the use of computerized tools in the clinic setting, benefits and barriers exist for the use of computerized tools such as e-mail.

**Benefits**

The benefits of e-mail communication between providers and patients are identified in the following emerging themes:

1. **Feeling of social support between patient and provider**—Speaking specifically of the older adult population, Gatto and Tak (2008) identified that computer and internet use was important in the lives of older adults and helped them stay connected to family and friends. From their study, the positive concepts of connectedness, satisfaction, utility, and positive learning experiences emerged. Young adults were found to be adept at expressing their health concerns electronically, and doing it with a high degree of candor and directness. A survey was made of the language used by
adolescents in e-mails posted to an adolescent health website situated at http://www.teenagehealthfreak.org/homepage/index.asp using corpus linguistic techniques. Results revealed that adolescents are interested in their health, but have difficulty communicating concerns to their health care providers face to face. E-mail might make communication easier for them (Harvey et al., 2008).

2. Managing chronic diseases which could save money by keeping patients out of the hospital and in the home setting—Among physicians currently using e-mail with their patients, “the most consistent theme was that e-mail communication enhances chronic-disease management.” (Patt, Houston, Jenckes, Sands and Ford, 2003)

3. Increased patient satisfaction—The willingness of patients to use e-mail technology to communicate with their health care providers and their expectations of response times was explored. Results indicated that the majority of interest was for prescription refills, nonurgent consultations and to obtain routine laboratory results or test reports. Expected response times differed depending on the service. For example, most patients (53%) expected a response with lab results within nine to twenty-four hours (Couchman, Forjuoh, and Fascoe, 2001).

4. Increased convenience—In the first of a two-article review, Car and Sheikh (2004) examined the scope of e-mail in the areas of preventative health care, health education, and in the management of non-urgent conditions. Through a systematic review of literature, the authors identified several potential advantages of e-mail in delivering health care as increased convenience, increased access to care, increased patient satisfaction, increased quality of care and improved efficiency.

While the results of most studies report positive attitudes, there are valid concerns or barriers worth reviewing.

Barriers

Following are the four prevailing barriers identified within the research:

1. Reimbursement eligibility—A study on e-mail use between physicians and patients revealed that many physicians are hesitant to use e-mail with patients given that time spent doing so is not currently reimbursable (Hobbs et al., 2003).

2. Time constraints experienced by the practitioner in incorporating e-mail into an already-busy clinic environment—The survey conducted by Patt et al. (2003) reflected that physicians were concerned about the “potential of increased demand on physician time, particularly with overuse of e-mail by patients” (Patt, et al.,
2003, Discussion para. 2).

3. **Decreased perception of emotive cues**—In the first of the two-article review by Car and Sheikh (2004) which examined the scope of e-mail in the areas of preventative health care, health education, and in the management of non-urgent conditions, the authors identified decreased perception of emotive cues as a potential disadvantage. Like other forms of written communication (such as letters and faxes), e-mail does not easily provide the subtle emotive cues often gleaned from vocal intonation and physical demeanor that aid interpretation. Scope for non-verbal communication is currently very limited.

4. **Patient information privacy considerations**—Within the health care setting, the U.S. Department of Health and Human Services requires that providers ensure privacy of patient information when using electronic communication tools (U.S. Department of Health and Human Services, n.d.). The Health Insurance Portability and Accountability Act (HIPAA) regulations could be seen as a barrier to implementation of e-mail communication between provider and patient. It does not have to be, however. In their pilot study, Leong, et al. (2005), state:

   With the Health Insurance Portability and Accountability Act (HIPAA) regulation, extra diligence is required to insure privacy. Before using e-mail to exchange information, physicians must obtain written informed consent from patients. Patients need to understand that e-mail communication is nonsecure and confidentiality cannot be guaranteed. E-mail should not be used for urgent or sensitive matters (p. 186).

**Theoretical Framework**

While e-mail use between the clinic NP and patients may seem like a new idea, a review of scholarly literature from the past ten years shows that it is not. In his book, *Diffusion of Innovations* (4th Ed), Everett M. Rogers (1995) opens his discussion with this sentence, “Getting a new idea adopted, even when it has obvious advantages, is often very difficult” (p. 1).

An innovation may be a new technology, a new idea, or a new way to use an existing technology or idea. What counts is how the innovation is diffused, accepted and used. Rogers (1995) states that,

A technological innovation usually has at least some degree of benefit for its potential adopters. This advantage is not always very clear-cut, at least not to the intended adopters. They are seldom certain that an innovation represents a superior alternative to the previous practice that it might
From the time an individual (or members of a social system) is first introduced to an innovation to the time the individual puts the innovation to use, Rogers (1995) holds there are five steps an individual will take, which is termed the innovation-decision process. The five steps are: knowledge, persuasion, decision, implementation, and confirmation.

Rogers (1995) notes that each individual’s innovation-decision process is largely a result of personal characteristics. These characteristics include innovators, early adopters, early majority, late majority, and laggards. It is important to note that these characteristics are representative of a continuum and there are no pronounced breaks between each of the five categories (Rogers).

All decisions have consequences. Rogers (1995) states “consequences are the changes that occur to an individual or to a social system as a result of the adoption or rejection of an innovation” (p. 30). Some consequences will be desirable/undesirable, direct/indirect, or anticipated/unanticipated. Whether or not the innovation of e-mail in the clinic setting is positively diffused will depend greatly upon the individual NP and whether or not she or he is willing to become an innovator.

E-mail Applications in the Real World

In the review of literature, most authors agree that e-mail guidelines need to be in place for both the practitioner and the patient. While there are currently no standardized guidelines in place, certain aspects of using e-mail in the clinical setting do appear to be standard. If e-mail communication between patients and practitioners is to be effective, each component needs established guidelines. The responsibility to establish criteria and set expectations for themselves, the office staff, and the patients falls to the practitioner.

Some criteria for establishing provider-patient e-mail are:

- Patients need to be aware that communication with the provider by e-mail is possible.
- E-mail should never be used in an emergency. Patients should be instructed to call 911 (or their emergency number)
- Patients should be instructed to contact the health care provider by telephone to report a sudden change in health status or for discussion of sensitive information
- The Internet is never 100% secure. Confidentiality cannot be guaranteed, so sensitive information such as HIV/AIDS, mental health issues, or substance abuse issues should be discussed by telephone or in person, not through e-mail
- Patients need to be aware that the provider may retain or document e-mail
communication in the patient’s medical records. This might be a copy or a written summary. The message may be forwarded to others if necessary.

- The patient’s name, medical record number or date of birth, and a contact number should be provided in the body of the message in order to verify the identity of the patient
- Misdirected e-mail creates delays. Both the provider and the patient should double-check the e-mail address(es), all information and attachments before sending
- E-mail communication should be brief
- E-mail communication cannot take the place of a medical examination in person
- The subject line is the place for the type of request, such as prescription refill, request for advice, non-urgent questions as follow-up to an exam or after a surgery, etc.
- Providers need to inform patients, in writing, of proper e-mail usage. Patients who refuse to use e-mail responsibly can be prohibited from using e-mail as a means of communicating with the provider
- Providers should have an established policy for handling patient e-mail, including time for response
- Providers should inform patients of privacy issues, such as hackers, office staff who may handle messages, electronic medical records if available, and accessing e-mail from a remote site
- Providers should establish procedures for sharing patient e-mails, such as consulting with another physician. Patients should be informed prior to sharing of information
- Patient e-mail addresses should never be used for marketing purposes
- Provider and patient should use the automatic reply when possible, or otherwise acknowledge the message was received
- Providers should have an automatic message when office is closed or the provider is away, and should include alternative contact instructions
- Provider should always be professional in communicating with patients
- Providers should have procedures in place for archiving and retrieving e-mail communications
Providers should protect patient privacy at all times and use the blind copy feature when sending mailings to a group of patients to hide individual e-mail addresses and names.

A provider-patient agreement and informed consent for use of e-mail form should be developed, with a copy given to the patient and one placed in his/her medical record.

Standardized guidelines for e-mail usage between providers and patients may not be possible because so many variables exist between providers. A rural clinic attached to a teaching university hospital might have different needs or requirements than those of a clinic attached to a general hospital and still more different from a physician in a group of physicians. With so many variables in both practice and available technology, guidelines for e-mail communication with patients must be a policy decision.

As much as Internet technology has changed in the last ten years, the article, “Guidelines for the Clinical Use of Electronic Mail with Patients”, by Kane and Sands published in JAMIA in 1998, is still an excellent resource for providers who need to develop their own guidelines for e-mail communication with patients.

Putting e-mail into practice

Some real world implementation of patient-provider e-mail was examined in a survey by Patt et al., (2003), which identified that despite the benefits of provider/patient e-mail documented within the literature, use of this type of communication has not been widely adopted. In order to understand their experiences, the researchers conducted phone interviews with 45 physicians. Results were grouped within one of four domains: (1) e-mail access and content, (2) effects of e-mail on the doctor-patient relationship, (3) managing clinical issues by e-mail, and (4) integrating e-mail into office processes. Importantly, a prominent subdomain identified was the effective use of e-mail for chronic disease management. With 45 physicians surveyed, 642 comments were reported to the surveyors. The following is a sampling:

- If they (patients) have a simple question that is not urgent then they do not have to wait on the phone, for example ‘Can I take my meds at bedtime with milk?’
- Sometimes (the nurses) filter questions (received by phone) appropriately but sometimes they do not. With e-mail, when patients mail me a concern I get it.
- There are some patients who are unable to communicate verbally but who are able to put information on paper or who have become accustomed to chat rooms. With those people, I have been able to communicate much more effectively.
had one patient who e-mailed me that she had another issue to discuss with me but she hadn’t brought it up earlier because she was too embarrassed to do so in front of the medical student.

- Wives e-mail and tell me that their husbands are coming in and they are not going to say this but they are passing blood, etc.

E-mail is a fabulous way to establish rapport with patients and keep the lines of communication open. The only thing that I am scared of honestly is when patients e-mail me with problems like “shortness of breath” or with 20 questions which they feel like I should be able to answer right away. A policy needs to be in place regarding expectations about response time, what can be asked, the types of things that would be appropriate or inappropriate, and how my e-mail would be handled if I were to go out of town. I have chosen my patients impromptu, people who I think can handle the task (of using e-mail). If no one is going to pay you for the time, it is not cost effective to use e-mail. Unless reimbursement changes, e-mail consultation will not work (Patt et al., 2003).

**Conclusion and Future Considerations**

Despite the positive results within these studies, practitioner reluctance seems to be the prevailing theme. Time constraints, e-mail information privacy and security, reimbursement, and quality of the e-mail consultation topped the list of provider concerns.

While researching the topic of reimbursement, Virji, Yarnall, Krause, Pollak, Scannell, et al. (2006) discovered that forty-two percent of patients within the study group were willing to pay an out-of-pocket fee to have e-mail access to their physicians (para. 3). Since e-mail is not currently reimbursable through private insurance or Medicare/Medicaid, NPs may want to consider charging patients a small annual fee for e-mail communication services. “In the future, the introduction of a clinical procedure code for e-mail communication could make it possible for time spent using e-mail to be reimbursed, coupled with appropriate billing systems, could spur increased utilization” (Virji et al., 2006, Discussion para. 1).

Most health care professionals are working in a world of rapidly evolving computer technology. Despite the potential for rapid, asynchronous, documentable communication, the use of e-mail for physician-patient communication has not been widely adopted (Patt et al., 2003). E-mail may be one of the most widely used internet applications for communication today, but appears to be underutilized by the health care providers to communicate with existing patients. Patients, however, seemed to focus more on the positive theme of ease of access to communicate non-urgent matters to their providers.

Culturally diverse populations such as older adults and adolescents seem to
show interest in communicating health concerns via e-mail with their providers. There are many other aspects to consider while exploring cultural diversity within e-mail applications. For example, as the clinic practitioner considers the use of e-mail as a tool to connect with patients, ethnicity and knowledge of related cultural practices should help direct the practitioner in whether e-mail communication is appropriate for that particular patient. Urban versus rural location is another example of cultural diversity that warrants consideration for the practitioner. In any culture, the practitioner should keep in mind that e-mail might not always be the best form of communication for a given situation; however, it does improve patients’ access to their health care provider and facilitates sharing of information (Car and Sheikh, 2004).

Incorporating e-mail communication into routine clinic practice should continue to be studied based on sound evidence from current literature. Future research needs to address the impact of e-mail on provider-patient relationships; identification of cultures most likely to benefit from e-mail communication; and understanding of training, security, and emotive communication issues.

Nurse practitioners in particular, excel at communicating and teaching patients about health maintenance and disease prevention in combination with acute and chronic disease management. This holistic, patient-centered approach provides a unique opportunity for the NP to utilize e-mail communication with existing patients. Through e-mail, the NP can become more accessible to patients and offer the ongoing personal support and direction that patients are requesting.

In today’s ever changing health care system, NPs are valuable resources for the rural American population. E-mail may link the rural clinic NP to patients who live in remote areas for management of some chronic diseases. For example, the stable diabetic patient could e-mail finger stick blood sugar results to the NP, rather than driving long distances to the clinic for routine management of their disease (Patt et al., 2003).

In the context of provider-patient communication and even management of chronic illnesses, e-mail holds exciting potential to augment and facilitate health care delivery at a time when the personalized provider-patient relationship is under threat from increasing demands on health services (Car and Sheikh, 2004).
References


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