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E-mail in Clinical Orthopaedic Practice

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Electronic mail (e-mail), like letters, faxes, and telephone calls, is becoming a commonly used surrogate for in-person contact between physicians and patients. E-mail is not new, but only in recent years has the technology been easily accessible to the general public. The growth of the Internet and the availability of low-cost or free Web-based electronic mailboxes have taken e-mail out of the realm of university and governmental researchers and placed it in a majority of American households. It is projected that there will be a total of one billion accounts worldwide by the year 2002[1]. Because of the ubiquitous nature of this medium, e-mail is becoming a common means of communication between doctors and patients.

Perhaps because of the sudden growth of e-mail use, there are few articles in the literature discussing e-mail as a form of communication in the practice of medicine. While some guidelines have been suggested for physicians in clinical practice[2], practical issues such as ensuring patient confidentiality have not been fully defined. Doctors and patients need to understand the medical and legal implications of e-mail use in order to anticipate and avoid problems.

We have identified five features of electronic communication that can have a positive or negative impact on the practice of medicine. The goals of this essay are to heighten awareness of the potential benefits and problems associated with the use of e-mail as a means of communication between physicians and patients and to promote a discussion of these issues in the orthopaedic community.

E-mail Is Asynchronous

E-mail is an asynchronous mode of communication. In simple terms, this means that, in an e-mail dialogue, the recipient does not have to sit idly while the other party is transmitting. Rather, transmission is active, but receipt is passive; messages are retrieved (and responded to) when convenient. In this way, e-mail more resembles an exchange of letters than it does a conversation. Of course, with information moving at the speed of light, rapid responses through e-mail can resemble spoken communication. In general, the potential for asynchrony offered by e-mail is beneficial for doctors and their patients. A simple medical query that does not need an immediate reply can be answered hours later, with no need to have both parties online at the same time. Thus, the doctor can block out some time to reply to the patient, without concern that the patient may not be available at a given moment.

While the asynchronous nature of communication through e-mail can be beneficial, this feature has potential problems. Patients may not realize that the communication is asynchronous, especially if, by chance, an earlier message had been replied to immediately. A naive patient may use e-mail to communicate a problem requiring immediate attention; as a result, that message could potentially remain unattended to for an indefinite period of time. Hence, e-mail is not the preferred means for a patient to notify a physician that his or her cast is tight or his or her fingers are turning blue. Similarly, if the physician were to reply to this urgent message by e-mail, there would be the same potential for delay. That type of information should not be allowed to sit unread on an e-mail server; it should be communicated by telephone or in person with the appropriate sense of urgency.

The only way for a physician to ensure that important e-mail is not ignored for too long is to check his or her e-mail continually. However, this is obviously unrealistic, and it would negate the benefits of asynchrony. We therefore recommend, as noted below, that all physicians' e-mail accounts offer an automatic reply instructing patients to call with urgent issues and to give appropriate telephone numbers.

E-mail Is Terse

Although e-mail is sent without a charge per word, many e-mail messages resemble telegrams in that they are short and to the point. This can be a benefit to doctors, who can respond to direct questions with brief replies. In a face-to-face conversation, such directness might be considered rude; but this is not so with e-mail. This is a benefit to patients too, as the doctor can send answers without necessarily having cleared a block of time for the conversation. Also, it has been suggested that certain patients may be able to express themselves more effectively through e-mail[3].

The succinct nature of e-mail has its pitfalls. E-mail is impersonal and can inhibit complete communication. Voice tone and inflection, which can add substantially to our interpretation of the spoken language, are lost. Poorly written e-mail could be subject to misinterpretation, with potentially adverse consequences[3]. Also, there is little chance for "therapeutic communication" in e-mail. As we all know, patients sometimes ask questions not only to obtain information but also to convey concerns.

There is, in our view, no way around this issue. E-mail implies terseness, for better or worse. The doctor, therefore, must not allow patients to use e-mail as a complete substitute for face-to-face conversation. Often, the right response to an open-ended question is "come into the office and we'll talk about this." In addition, patients and physicians should always remember that there is no replacement for a physical examination in the diagnosis of a medical condition. Thus, even if the "conversation" part of the exchange is complete, the doctor may still be missing an important part of the picture without doing a physical examination. This is true even if photographs are attached to the e-mail.

E-mail Generates a Permanent Record

With the old-fashioned method—the method that many doctors still use—the patient calls and the telephone message is written down. The doctor returns the call, answers the question, and, if he or she is diligent, dictates or writes a note for the chart indicating the content of the conversation. With e-mail, all of these steps are condensed. E-mail automatically generates a record of the call and the content of the reply. This certainly is a time-saver, and it may lead to better care. For these reasons, many practitioners welcome e-mail as a method for improving documentation of the patient's record[4].

There are several drawbacks to the permanent nature of e-mail. Many users of e-mail (physicians and patients alike) may not realize that an everlasting record is being created. While this mode of interaction feels informal, it is also permanent[4]. The contents of computer servers, which house electronic mailboxes, are often physically preserved on backup tapes. Thus, even though the user of an e-mail account may believe that a specific message is being deleted, a permanent copy of the mailing may (and probably does) exist. The servers and backup tapes are almost always out of the control of the e-mail user. As a result, ensuring the permanent deletion of a message is nearly impossible. *Electronically deleted messages are recoverable and legally discoverable*[4]. Therefore, any electronic exchange between physician and patient must be precisely and carefully worded. E-mail is not a place for off-the-record discussions, as the recorder is running—always.

E-mail Is Inexpensive

Once the fixed costs (access to a computer and an e-mail account) are paid, the marginal cost of sending an e-mail is close to zero. This can enrich patient-physician communication: physician accessibility is increased. On the other hand, the elimination of cost associated with contacting one's doctor has a potential downside: there is one

less constraint on patients' contacting their doctors about anything and everything. In fact, a major concern mentioned by physicians leery of adopting this new technology is the potentially large volume of messages that they may receive if they allow patients to communicate with them through e-mail on a routine basis[4]. These physicians fear being flooded with unimportant messages from patients who inadvertently abuse this privilege because of the ease and convenience of e-mail communication[3]. The answering of e-mails could overwhelm an already busy clinician, and it would represent yet another activity for which physicians are not reimbursed[3,4]. In response to the latter claim, some authors have suggested that physicians should eventually be reimbursed for time spent working on e-mail consultations[4].

E-mail Access Is Easy—Perhaps Too Easy

One can debate whether the Internet has really turned the world into a global village, but one fact is undeniable: by using the Internet, people can easily keep in touch, regardless of where they are. By using the World Wide Web, one can read and respond to e-mail from all over the globe. For the physician trying to keep in touch with his or her patients, this is a great step forward. The potential for worldwide access presents no downside to the physician: access is voluntary but available if needed. However, the ease of access creates vulnerability in one key area: patient confidentiality.

Confidentiality with use of e-mail is far less ensured than it is with face-to-face conversation. Although other forms of communication, such as letters, are also subject to breaches, with e-mail there is no lost envelope or opened seal; the recipient may not even realize that the message has been read by others. This unique attribute may create an even greater demand than usual for protecting and ensuring confidentiality.

There are several facets to the issue of confidentiality and e-mail security. An e-mail can be sent inadvertently to the wrong account, or it can be maliciously opened by snoopers or "hackers." While the transfer of e-mail can be protected through encryption software, which scrambles the message until it is received by the intended recipient, few users of e-mail take this measure. For this reason, some law firms prohibit communication between attorneys and clients through Internet-based e-mail, as it is believed that e-mail communication may not satisfy "reasonable precaution" standards in protecting the attorney-client privilege[4]. It is not clear what standards are expected of doctors in this realm, but it is possible that a doctor could be held liable for not protecting an e-mail record from hackers.

E-mail can also be read by parties other than the intended recipient. The physician cannot assume that only the patient has access to the electronic mailbox; the receipt of an e-mail message by the patient alone is not guaranteed. For example, given that many patients use e-mail accounts provided at their workplace, an employer may have access to sensitive medical information[3,4]. Spouses, family, and friends may also have access to a shared account. Again, it is unclear to what extent the physician must take steps to ensure confidentiality, but discretion should be the rule. It is clear that e-mail creates a permanent record and that the electronic document must be guarded with the same diligence accorded true medical records.

We share the belief that patients must be informed of the potential for breaches in confidentiality prior to using e-mail to communicate with their physicians[2,4]. Spielberg contends that "simply because patients use e-mail informally in other contexts does not mean they understand the implications about sensitive medical topics or that those communications may become a part of their medical records (which others might see)."[5] For these reasons, Spielberg (who is an attorney) recommends that patients sign a written consent form prior to using e-mail to communicate with their physicians. Although that may be too much to ask, warnings to patients should be routine.

Summary

A review of these five factors alone shows that e-mail may represent a boon to patients and doctors but that it is not without pitfalls. We are unsure as to what the future holds, but we suggest that we try to shape that future, not just predict it. We therefore offer the following suggestions to physicians, which may help to maximize the benefits and minimize the pitfalls.

1. Give your e-mail address to patients only if you also give them written instructions about the ground rules beforehand. Inform them specifically about the limits of confidentiality, and provide them with a telephone number for emergencies.

2. Create a separate e-mail account to be used solely for communication with patients. This, if nothing else, will remind you that e-mail to patients is a special form of communication that is not to be taken lightly.

3. Have somebody—an office assistant, a resident, a colleague—check that e-mail account often if you cannot.

4. Place an automatic-reply feature in the e-mail account used for communication with patients that advises patients not to use e-mail for emergencies and to give telephone-contact information. This automatic message should perhaps also include general caveats about the use of e-mail for doctor-patient communication (the same information given in number 1 above).

5. Print a copy of each e-mail and place it in the patient's chart.

6. Consider all e-mail to be official, written communication. Do not be afraid to write back "I think I need to see you in the office for that."

7. Do not offer new diagnoses or treatment suggestions to patients by e-mail, especially when you do not know the patient.

8. Do not transmit emotionally charged information by e-mail. For example, biopsy results may not be condu-

cive to such impersonal communication.

9. Make sure that patients acknowledge receipt of your response.

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