

Technology and Patient-Provider Interactions: Improving Quality of Care, But Is It Improving Communication and Collaboration?

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Technology has been changing health care for more than a century, and with each new technological advancement—be it telephone, e-mail, the Internet, electronic health records (EHRs), personal health records (PHRs), or social media—there has been both celebration and apprehension.^{1,2} Practitioners see the advantages of efficiency and accessibility but often feel concerned by how each tool may overwhelm them as patients seek care or gain access to misinformation. Privacy is also a consideration.¹ As a result of these concerns, health care has been among the slowest to embrace advances in communication and information technology.³

Yet technology holds the potential to improve both individual and organizational health outcomes.^{4,5} As clinicians and educators, we know that increasing our patients' knowledge about their current risk factors while facilitating collaboration with them to achieve their health goals can improve clinical outcomes. Patients' active use of e-mail, the Internet, PHRs, and social media can improve access to care, enhance patient education, facilitate screening programs, and increase adherence to treatment plans, especially when integrated within the context of an effective provider-patient relationship.^{1,4,5} Technology is shifting knowledge (e.g., patients can access guidelines for care on the Internet or read their own EHRs), power (e.g., social media sites allow patients to share information about care and providers), and decision-making ability toward patients.^{2,6} Patients find their increased access to information and their own medical records

empowering.² So how can we as providers embrace technology in our relationships with patients and use it to improve our communication with them?

Impact of the Internet

Access to the Internet has increased because of the availability of computers at work, in homes, and even in local public libraries. As a result, we can expect that our patients are online. A survey conducted within a large health network estimated that 50% of patients with type 2 diabetes currently use the Internet.⁷ The Internet gives our patients easy access to information, allows clinicians to easily update new information, and offers the flexibility to create interactive formats that can improve patient understanding and retention of information.⁸ The Internet also has positive outcomes for our patients who have access to it. Patients who search for information on the Internet can improve their relationships with us because the information they find helps them make more informed choices and use health service resources more appropriately.⁸ In fact, patients who report looking for health information on the Internet indicate that having the information gives them more confidence to talk to their health care providers about their concerns, helps them understand their condition better, and assists them in following their provider's advice.⁸ Patients also believe that their access to information on the Internet challenges their providers to be more up-to-date with the latest scientific evidence on various treatments.⁸

So, instead of fearing that patients will find misinformation on the Internet, be thankful that patients are searching to find information to proactively take care of their health and guide them to the best possible resources. How we communicate with them about what they find can affect their confidence and satisfaction with care, so it is important that we discuss it with them and put it in the context of their health goals and priorities.

Engaging Patients in Their EHRs

In this issue of *Diabetes Spectrum*, our From Research to Practice section (p. 145–168) is dedicated to discussing the impact of EHRs in improving individual and population-level care. EHRs do have the potential to improve individual and organizational-level outcomes. Yet little is published on the direct impact of EHRs on provider-patient relationships or on how EHRs help or hinder communication.

In 2009, we conducted two focus groups with 23 women to learn about their Internet, PHR, and social media habits (JLB, unpublished observations, 2009). The women were recruited to participate through the mail, based on past program participation. The age distribution of the women was 25–44 years ($n = 1$), 35–44 years ($n = 2$), 45–54 years ($n = 5$), 55–64 years ($n = 10$), and ≥ 65 years ($n = 5$).

During our discussion, women brought up how EHRs had changed their provider visits, and their feedback was not positive. One participant stated, “I don’t like when doctors look at the computer screen and not me.” Another said, “I feel like I’m invisible to the provider when they’re looking at the computerized chart. I would like them to sit with me, and together we face the computer, and they show me what they are seeing and reading.”

What is most important to patients is that providers seem personable, genuine, competent, and interested in them. They are motivated when their providers give them encouragement and help them see how their health is evolving over time. One patient in the focus group said, “Today I had my yearly physi-

cal, and my doctor went through my cholesterol changes and weight history since 2005. It helped motivate me to see the relationship. It helped me see the consequences of my lifestyle.”

If you are using EHRs in your practice, try to think through how you can use available graphs, charts, and tables to show your patients their progress or lack of progress; use EHRs as a tool to help patients set goals and stay on track. Keep eye contact as much as possible when you do have to enter information in an EHR, and explain to your patients what you are doing. It helps them feel more comfortable and engaged in their visit.

Integrating PHRs Into Practice

PHRs are not discussed in this issue’s research section, but be on the lookout for an article on this topic in our fourth issue of this year. PHRs are a tool individuals can use to share health information, track health and behavioral outcomes, and make themselves better-educated consumers of health care.⁹ Numerous PHRs are available and provide options to easily store, track, and display information (e.g., glucose or blood pressure readings) and share these results with providers, thereby improving care.¹⁰ Although PHRs do raise privacy issues for some patients, patients also perceive that they offer significant benefits. Patients believe that PHRs can improve their provider-patient relationships, increase their understanding of their own health, clarify the instructions they receive during clinic visits, and facilitate their adherence.¹¹

Limited studies are available that test interventions that integrate PHRs directly with EHRs used by patients’ primary care physicians. In one study done with diabetic patients using a PHR integrated with an EHR,⁵ researchers found that users of a diabetes-specific PHR were more likely to have significant medication therapy changes at their next clinic visit, which led to corresponding declines in risk factor levels ($P < 0.001$) compared to patients using a PHR that was not specific to diabetes.

Although PHRs can improve care, they are not often readily accessible to many subgroups of the patient population (e.g., the elderly or underserved populations). Providers can help patients by having computers in the clinic or collaborating with local libraries to help patients access resources available to them. Providers can also encourage patients to sign up for a PHR offered through their health plan.

Social Media May Provide Patients With Social Support

Although blogs, Twitter tweets, wikis, and social networks such as Facebook are often used to speed up and enrich communication, we may not initially think of them as tools to improve patient-provider relationships.³ Yet these social media have the potential to improve access and quality of care and to provide patients with a unique type of support. Patients can shop around and compare care options and outcomes through social media platforms such as PatientsLikeMe.com.³

Blogs, tweets, and other forms of social networking leave behind the traditional medical model of one-to-one communication carried out in person or over the telephone and enable communication from one to many (via a blog post or a tweet) or from many to many (as on one’s Facebook wall).³ Rachel Baumgartel, who lives in Boulder, Colo., keeps a personal blog (<http://talesofmy30s.wordpress.com/>) and sends tweets almost daily to dozens of people at a time. She is using social media to manage her type 2 diabetes.³ Through her blog and tweets, she updates people about what she is eating, her blood glucose levels, her exercise routine, and other aspects of her daily self-care, and, in exchange, she gets support from people following her progress. Often, we tell patients to talk about their personal health goals with others because this creates accountability and may increase their chances of success; social media takes accountability to a whole new level by broadcasting patients’ goals to the entire world or large portions of it.

One may wonder how social media affects provider-patient

relationships. It is about moving the locus of control from us (providers) to them (patients). It does not eliminate any face-to-face visits we have with patients, but it could be used just like telephone calls or e-mail messages to enhance between-visit care and help us have deeper, more engaged relationships with our patients. Using social media is just one more way that individuals with a chronic disease can engage in successful self-management.³

Conclusion

Technology has many potential benefits that we, as providers, can use to improve our communication and collaboration with patients. It can help patients learn more about their health or medical conditions, assist in coordinating care, inform patients about medical decisions, improve or reinforce their memory regarding instructions given at clinic visits, increase patients' participation in care, help them learn how to cope with disease and make health behavior changes, reduce medical errors, and, in general, improve the quality of care patients receive.^{2,12} Increasing patient involvement with their medical records may also help them take more ownership of their health care and contribute to their health literacy.¹²

In a recent article in *Military Medicine*,⁶ VADM Michael Cowan,

MC, USN (ret.), described how technology will affect care: "Tomorrow: To get medical assistance, do research on the Internet, consult a social network (or join a new one), IM or e-mail a physician(s), consider the advice of all, make a consensus decision, and have a prescription delivered to the front door at least as quickly as a pizza. Time elapsed: minutes to hours." As our patients have more access to these communication and information resources, we need to get on board and figure out the best possible ways to communicate and collaborate with our patients.

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