Opinion & Special Articles: Professionalism in neurology
Maintaining patient rapport in a world of EMR

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Health information technology is playing a critical role in fostering more efficient and effective health care systems by improving how information is recorded, organized, and exchanged through the use of electronic medical records (EMR). EMR are defined, according to the International Organization for Standardization, as "repositories of patient data in digital form, stored and exchanged securely, and accessible by multiple authorized users. They contain retrospective, concurrent, and prospective information, and their primary purpose is to support continuing, efficient, and quality integrated healthcare."[1]

Meaningful EMR use is being promoted by governments and organizations worldwide as it can improve health care delivery, particularly for people with chronic conditions, whose growing prevalence is the single greatest cause of rising health care spending in developed countries.[2]

In a recent WHO report,[3] neurologic disorders requiring long-term care cause substantial burdens, which are projected to increase further by 2030. More than half of this burden in disability-adjusted life years (DALYs) is contributed by cerebrovascular disease, Alzheimer and other dementias, epilepsy, and migraines. EMR have been shown to be useful in the management of these diseases[4,5] as they promote better coordination within the health care system.

While the promises are compelling, their implementation has increased concerns about lengthened visit time, additional training needs, privacy and confidentiality breaches, and possible negative influence on patient–doctor encounters. These new technologies will inevitably shape patient–doctor communication, and little is known about how this may affect patient-centered care.

There is strong evidence that patient–doctor rapport has a direct influence on health outcomes. Effective patient–doctor communication has been associated with multiple benefits. These include patient satisfaction and ability to recollect information, a better understanding of medical conditions, cooperation with treatment plans, physiologic markers (e.g., blood pressure, blood glucose levels), and functional status measure improvement.[6] Patient–doctor rapport is considered effective when it leads to the following outcomes: (1) patients disclose enough information about illnesses leading to accurate diagnoses; (2) doctors, in consultation with patients, select medically appropriate treatments acceptable to the patients; (3) patients understand their condition and prescribed treatment regimen; (4) doctors and patients establish positive rapport; (5) patients and doctors are committed to fulfilling their responsibilities during treatment and follow-up care.[7]

Communication between patients and doctors is typically influenced by sociodemographic characteristics (e.g., sex, ethnicity, education, age) and the environment where the communication takes place (particularly, comfort and cleanliness of the clinic, time allotted for encounters, and the degree of privacy). The use of EMR is another important influence on patient–doctor interactions. Several factors influencing how EMR are used and perceived have been identified.[8] There are 4 different categories: spatial, relational, educational, and structural (figure e-1 on the *Neurology*® Web site at Neurology.org). Spatial is how the location and physical presence of EMR affect patient–doctor communication. Relational refers to the ways patients and doctors view EMR and how this affects usage. Educational refers to increasing doctor expertise and helping patients understand more about using EMR. Structural refers to outside factors (e.g., institutional, technological) that affect how doctors think about EMR use.[8]

While many factors are beyond the health care providers' control, doctors can implement EMR use and improve interpersonal communication in their clinical practice by integrating certain behaviors and procedures.

Spatial factors. One important factor impacting patient–doctor rapport is spatial organization of computerized environments, especially where screen locations impede eye contact and create barriers between patients and doctors. Patient–doctor communication

Table	Etiquette tips for modern mannered neurologists
Environment	
	Ensure patient's privacy and confidentiality in the examination room
	Ensure all devices needed are present and working for the doctor's use
	Use mobile computer monitor or tablet computers: the screen should be visible to the doctor and the patient, but it should be possible to temporarily shield it from the patient
Doctor–patient relationship	
	Get the patient encounter off to a good start
	Review the chart before entering the examination room
	Introduce any colleagues who may accompany you
	Focus your attention on patient concerns first and do not walk straight to the monitor
	Use appropriate verbal communication
	Use structured medical interview models already proven to enhance communication, for example, the BATHE technique[11]:
	Background: "What is going on in your life?"
	Affect: "How do you feel about that?"
	Trouble: "What about the situation troubles you the most?"
	Handling: "How are you handling that?"
	Empathy: "That must be very difficult for you."
	Use simple medical language and summarize what has been typed and why as a way of asking for verification and providing reassurance to the patient
	Use appropriate nonverbal communication
	Make eye contact often
	Face the patient while reading the monitor
	Integrate typing around your patient's needs
	Use facial expressions in response to the patient's comments as a way of letting the patient know you are listening attentively
	Avoid distractions (do not navigate nonmedical Web sites during the encounter, do not answer the phone)
Doctor and patient education	
	Learn to type and to navigate the computer
	Use the computer and Internet resources for clinical decision support
	Use the computer screen as a visual aid, sharing it with the patient and pointing to it
	Promote an active role of patients in their health care by educating them on the use of personal health records
Structural features of the encounter	
	Reserve templates for documentation and structure the interview with open-ended questions
	Use, if possible, voice recognition, touch screens, and other technologies aimed at improving the data entry process

consists of back-and-forth conversations; however, when computers are present, they become part of that interaction. Rather than dividing, computers should provide a way to help patients and doctors connect more since they produce and process information. Ideally, the relationship would be considered an equilateral triangle—the computer is one apex and doctor and patient are at the other vertices. However, there are occasions when it is necessary to conceal the screen from the patient's view. Rearranging the position of monitors or using

tablet computers has the ability to change the dynamic of encounters as it may help share information with patients, foster their education, and eventually enhance patient–doctor communication.[8]

Relational factors. First impressions matter in clinical encounters. In fact, the introduction has been termed "the first step in the therapeutic process."[9] It is important that doctors focus all their attention strictly on patient concerns in the first minute of an encounter, and not just go straight to the monitor and patient's records after a brief greeting. Good communication while using EMR starts before the clinical encounter, with the doctor reviewing the patient's chart before entering the examination room. It is important for any neurologist to establish an open dialogue, partnership, and atmosphere of caring right at the beginning of neurologic visits through use of appropriate verbal and nonverbal communication (table). In several studies, the implementation of EMR seemed to amplify both positive and negative preimplementation communication patterns.[10] Concerning verbal communication, many structured medical interview models have been proposed to enhance patient–doctor communication and can be used to improve doctors' communication skills.[11] Spoken word is one part of communication; body language, attitude, and tone convey the rest of the message. Since computer use requires the doctor's focus, nonverbal communication signals are often not considered during neurologic visits. Making eye contact, sitting at eye level, smiling, avoiding distractions such as answering the phone, facing the patient while reading charts, or reacting when the patient speaks with verbal comments or facial expressions so the patient knows the doctor is paying attention could all enhance interaction.

Educational factors. In computerized settings, pressure exists for neurologists to enter chart notes during interviews. Doctors usually adopt 3 behavioral styles to manage this concern.[8] Doctors who focus more on information usually sit in front of their computer and follow what the computer prompts them to ask, entering data while patients speak. Doctors with an interpersonal style follow the patient's lead and focus on the computer less, waiting until after visits to enter the data. Finally, other doctors are able to multitask and focus on both the patient and computer at the same time. Whatever the behavior or typing style, doctors' typing skills and ability to navigate a computer have been shown to be crucial in effective EMR use. Thus, those skills are worth improving to enhance doctor–patient rapport.

Educational factors influencing doctor–patient relationships deal not only with the development of a doctor's proficiency in using EMR but also with

improving patients' understanding of how EMR are used during visits. Simple tips, like sharing and pointing to the computer screen during visits, using it as a visual aid, reading or summarizing what has been typed and why to verify, providing reassurance, and promoting electronic communication with patients can help utilize the potential of EMR to educate and engage patients. In this context, online repositories are of particular interest for personal health records (e.g., Microsoft HealthVault, Cleveland Clinic MyChart). Through the use of these platforms, doctors could access self-reported health information at the point of care and enable patients to access vital information that has been entered through the doctor's office. Ultimately this leads to better connections between patients and their doctors.

Structural factors. Patient–doctor communication in computerized settings is shaped by structural factors, including technological and institutional, which can affect the use and perception of EMR by doctors.[8] EMR notes are commonly created using templates and quick-text features; however, the results are often believed to lack clinical detail and to fully reflect the patient's situation. The neurologic visit should not be guided by template questions. While templates are a useful way to format notes, they can lead to problems during interviews because the question format does not allow patient communication to develop, an important part of patient-centered care. Future designs of successful EMR systems will require careful consideration of the user, system, and task characteristics. They should also be more usable and intuitive, and have accessible user interfaces from clinical and human factors best-practices perspectives.[12] Another possibility is template-free charting software, such as Praxis, whose neural network engine automatically generates the documentation of new patient encounters. This software instantly retrieves text from the most similar previous encounters, which allows automating clinical practice and working smarter. Voice recognition, handwriting recognition, touch screens, and other technologies aimed at improving data entry processes will be valuable in enhancing patient–doctor rapport.

Patient–doctor communication lies at the heart of patient-centered care, one of the Institute of Medicine's 6 goals of 21st Century high-quality health care.[13] Therefore, the path to better health care environments for patients starts with interventions aimed at improving face-to-face communication, and using EMR to further strengthen patient–doctor relationships and patient activation. Further studies are needed to recognize how EMR are used during medical encounters and how they shape communication with patients. These studies can provide hints to

enhance human connection and illustrate how to use EMR simultaneously with patient-centered care principles. Only through the integration of EMR with patient-centered care principles will these new technologies be able to fulfill the promises they bring to medicine and thereby truly improve the quality of health care systems.

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