

After-Visit Confusion

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The Case

An otherwise healthy 18-year-old woman presented to an urgent care clinic with new bumps and white spots near her tongue. The patient's mother accompanied her and expressed concern that this could be "thrush"—based on her own understanding of that condition. The patient was examined and noted to have small white ulcerations at the base of her tongue and one on the left buccal mucosa. The symptoms developed a few days following an upper respiratory infection. The rest of the examination was unremarkable. The physician explained that this was likely herpetic gingivostomatitis and provided related information about the condition and its treatment plan. The patient was then discharged from the urgent care clinic and provided an after-visit summary that is generated from their electronic medical record (EMR). The written materials outline the diagnosis, care plans, and follow-up needs, all of which were reviewed by the medical assistant.

After returning home, the patient's mother continued searching her daughter's condition online, remained concerned about the possibility of thrush, and sent a couple of messages to the provider via a patient portal within the EMR. One particular issue was that the after-visit summary stated that the patient's diagnosis was thrush, despite the physician stating an alternate diagnosis. Ultimately, the physician spoke with the patient's mother, confirmed that his diagnosis of a herpetic viral infection was correct, apologized for the error on the after-visit summary, and reassured her that the condition was self-limited and would improve, which it did. Although no harm resulted from the interactions, the mistake on the after-visit summary and the communication discrepancies it generated led to a number of unnecessary phone calls and follow-up communications, not to mention understandable distress to the patient and her mother. The after-visit summary incorrectly populated the diagnosis of thrush from the triage information and it was not updated after the actual evaluation by either the physician or the medical assistant.

The Commentary

This case represents an increasingly common scenario in busy practices across the country, regardless of whether it's in a primary, subspecialty, or urgent care setting. The relational dyad between health care providers and patients alone is complex.(1) When you include family members and other providers (e.g., nurses or medical assistants) or staff (e.g., front desk receptionists), the dynamics create greater opportunities for communication mishaps.(2)

In recent years, the growing presence of computers in examination rooms has introduced an additional actor to the "drama" of the provider–patient relationship.(3) Adding to this complexity are new e-health technologies that make asynchronous communication with patients possible.(4,5) These technologies, which are still largely works in progress, include, but are not limited to (i) *after-visit summaries* generated from new generation electronic health records (EHRs); (ii) *patient portals* that allow direct access to health information, test results, and communication with providers; and (iii) *health education materials* either printed as part of after-visit summaries (as was the situation in the above case) or accessed online via patient portals.

After-visit summaries provide patients with a recap of what happened during their clinic visit or hospitalization. These summaries often include the patient's problem list, diagnostic test results, and updated medication and allergy lists. They may also provide patients with tailored information relevant to the clinical discussions that occurred during their visits, such as laboratory and diagnostic test orders and results, recommended follow-up appointments or specialty consultations, and educational materials or decision aids pertinent to their diagnoses. The summaries are either printed out for patients or provided electronically. Patient portals are secure Web-based platforms that allow patients to view information about their ongoing medical care. The design, content, user interface, and applications of these portals vary greatly among current products. For instance, some portals simply allow access to basic diagnostic and medication information. Others offer patients the ability to directly communicate with their health care teams using secure e-mail; this allows handling of non-urgent health care concerns such as requesting prescription refills, scheduling appointments, and completing health care–related forms online. Health education materials, also available either in print or digitally, ideally provide patients with disease-specific information appropriate to their levels of health literacy and language capacities.

Electronic health records (EHRs) and associated e-health tools have all been developed to foster patient engagement and increased communication around health issues, with the goal of decreasing the incidence of medical error and improving patient outcomes. These tools are ideally designed to be provider and patient friendly so that users on both sides of the stethoscope can easily access information critical to diagnosis and treatment at all hours, day and night. Patients, especially those who are younger, computer savvy, and without multiple medical conditions, find them useful as adjuncts to customary medical services.(6)

Although they have many purported advantages (5,7) and have shown promise in enhancing specific chronic-disease outcomes (8), implementation of EHRs and e-health tools poses a number of questions to consider.(9) Most important, how can providers and their care teams seamlessly integrate these tools into daily practice? How can they do so in ways that keep the provider–patient relationship front and center? These tools have the potential to significantly achieve improved patient education by making personal health information more readily accessible. However, it is a mistake to think that they can augment clinical

outcomes without a large element of human contact. They are tools for improved care, not solutions in themselves.

When using EHRs and e-health tools, it is imperative that providers attend even more to the quality of their relationships with patients. This is challenging for everyone given the changes it requires in both patient and provider workflows and practices. While new information technologies offer many theoretical opportunities for enhancing communication with patients (10), they also have the potential to decrease providers' abilities to connect with patients in real time.(7) Guidelines for effectively integrating examination room computers into physician–patient visits are currently scarce (Table) (11,12); those for other e-health tools are virtually non-existent. Yet, progress is being made, as substantive information examining how to teach and learn communication skills using EHRs is just now becoming available.(13) Alternatives for optimal use of EHRs and e-health tools may come from their adoption and application by broad members of the health care team in models of care moving forward (e.g., patient-centered medical homes). Only individual case studies exist currently to help guide the tension between informing and educating while also cultivating critical relationships as part of the healing process for patients.(14)

As EHRs and e-health tools become more robust and their integration into the day-to-day practice improve, they may be able to prevent the kind of error described in this case. Until that time, medical professionals and patients alike will likely struggle with issues such as when and how after-visit summaries are best used to enhance—and not detract from—office visits, or how best to manage patient portals and the information contained within them. This would include situations such as how providers should attend to laboratory results and radiological reports prior to releasing them to patients for review via online portals. Thoughtful consideration of all perspectives will be required for successful outcomes and agreement on best practices. Until then, it is wise to remember that information alone does not necessarily imply understanding, nor does it decrease patient anxiety in the face of illness. Personal connection remains the key component in caring for patients and enhancing their clinical outcomes.(15) Technological tools are simply a means to achieve those ends.

Take-Home Points

- E-health tools are becoming an increasing part of care delivery systems and include after-visit summaries, patient portals, and health education materials, among other developing innovations.
- EHR and e-health tool adoption has the potential to augment information exchange with patients but can also detract from physician–patient communication without careful attention.
- Dedicated initiatives to improving current technology (and one's capacity to use it), addressing the systemic flow of information between health care team members, and enhancing provider–patient communication while using EHRs and other e-health tools are all important efforts to reduce medical errors in clinical care.

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Table

Table. Tips for effective use of examination room computers.([11,12](#))

- Use mobile computer monitors
- Learn to type; enhance skills in searching, decision support, and using evidence resources; practice fast screen scanning
- Integrate typing around your patients' needs
- Reserve templates for documentation
- Separate some data entry from the encounter; review problem list and previous visit before seeing patient
- Start with your patients' concerns, making sure the encounter is driven by them—data gathering is important, but secondary
- Tell your patients what you are doing as you're doing it; verbalize shifts to the computer by apologizing or asking permission; keep the conversation going

- Point to the screen; highlight the discussed data; print out when appropriate
- Encourage patients' participation in building their charts; promote future supplementary virtual communication
- Look at your patients; make sure your full attention is in listening to the patient, especially at the beginning of encounters and when sensitive issues are brought up—indicate this by pushing monitor away, positioning yourself facing the patient with eye contact, and moving your hands off keyboard and mouse

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