

# EHRs ... The Good, The Bad and The “To Be Determined”

In the past decade, information technology has significantly impacted every aspect of healthcare delivery. Electronic health records (EHRs) have become the norm, with various “pros” and “cons” associated with them.

The pros of EHRs include improved:

- Access to patient health information (PHI), anytime and anywhere, by users simultaneously.
- Documentation through consistent charting, the use of template forms and legible notes.
- Patient safety and quality of care from integrated alerts and prompts that include diagnostic test results, preventive care, and patient and provider result notification.
- Medication management via e-prescribing systems that may reduce the risk of adverse drug events and improve patient safety and practice efficiency.
- Patient care and treatment outcomes through the use of built-in preventive care, clinical decision-support and disease-management systems.
- Administration and paperwork efficiencies and cost reductions.

## Scenario: Timing of Lab Results a Concern

Mary Rosenberg presented to an ambulatory surgical center to undergo tubal ligation. Mary routinely took Lasix and Klor-con, due to a history of pregnancy-induced cardiomyopathy. The patient had been instructed to hold her Lasix and Klor-con two days prior to surgery. On the day of surgery, the surgical resident attempted to review the patient’s potassium level by accessing the EHR. His initial attempt was unsuccessful; however, he was able to access the results on a second attempt 20 minutes later at 7:15 a.m. The most recent lab results revealed a potassium level of 3.8.

The day after surgery, the nursing staff made a follow-up phone call to the patient’s husband. He reported that Mary was just not “feeling right” and had complained of all-over weakness along with cramping in her lower legs. The husband was instructed to call 911 immediately.

The lab results obtained in the emergency department revealed a potassium level of 1.9, well below the critical level. The patient was admitted to receive potassium replacement and to be monitored for any heart arrhythmias. She recovered without serious or permanent harm.

Her primary surgeon was notified of her admission. He could not understand how Mary’s potassium level had dropped from a normal level of 3.8 to a low critical level of 1.9. When the doctor further investigated, he found that the potassium level on the date of surgery had not been 3.8 but 2.3. He contacted the surgical resident of record and was perplexed.

Upon further investigation by the IT department and the supervising surgeon, it was determined that the lab values the resident saw on the day of surgery were actually values recorded 10 days prior to surgery. On the day of surgery, the 7:00 a.m. blood draw results had been delayed by a staff/shift change in the laboratory. The pre-op lab result and the corresponding critical value alert were time-stamped in the lab system as being added to the EHR at 7:49 a.m. The patient was out of surgery at 8:02 a.m.

In a situation like this, the patient and family could allege negligence against the primary surgeon, surgical resident and surgical center for not posting lab results in a timely manner and for operating on a patient with a critical potassium level, thus setting the stage for the development of pre- and post-op complications.

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In the scenario described on the previous page, a system delay prevented the resident from obtaining needed clinical information from the patient's EHR. Even when the resident was able to access the EHR system, he received less-than-recent test results. The situation was further complicated when a shift change delayed the release of the blood draw results. Therefore, the surgeon was not aware of more recent lab values, and he proceeded with surgery.

## Potential Risks and Liabilities

In addition to the potential medical-legal and patient safety issues illustrated by this scenario, the use of EHRs can present a number of system-related issues, which include:

**System Malfunctions** due to power failures or technical/programming malfunctions are probably the most

frequent causes of EHR failures or problems. Unfortunately, they are difficult to prevent. The result is the inaccessibility of PHI when it is needed for patient diagnosis or treatment.

(Examples: The screen freezes when a physician

tries to open a patient's EHR, or a system won't allow a physician to document until a pap smear is ordered—for a *male* patient.) While not all malfunctions are harmful to patients, they can lead to serious delays in treatment or diagnosis and put patients at risk.

The practice should have procedures in place that address these events so a physician and/or other practice staff will know what to do when

encountering a malfunction. In addition, the back-up plan should allow for no significant interruption in the delivery of patient care or the practice's routine. This back-up plan should be periodically tested to ensure it is still viable over time.

**Interoperability**, ensuring that computers communicate with each other and all systems speak the same language, is one of the most significant challenges in computerizing healthcare. With computer hardware and software constantly being upgraded, this can be extremely difficult. For example, if a diagnostic lab upgrades its software, how will it ensure compatibility and interoperability with all its facilities and clinicians? Will the rural health clinic 60 miles away still be able to access all patient test results electronically? Will the change be transparent to the end-users? Could the upgrade produce glitches? What testing is planned to ensure changes and upgrades function as intended before implementation?

These issues have the potential to trigger adverse events and increase liability exposure for healthcare facilities and providers. Having a system that can communicate with other systems, electronic devices (e.g., smartphones), practices, providers, and patients as needed and without exception is essential.

The wider access to PHI also exposes the system to hacking, viruses, general privacy and security risks, and unauthorized disclosure of PHI. It is paramount to have regularly updated security policies and procedures that address issues such as controlling access and using network tools to counteract viruses. Also, as the scenario shows, an



EHR is a much more dynamic record than a paper chart, as data can be entered at any time.

Interoperability also leads to a significantly increased amount of information in an EHR. At first glance, this appears to be a positive—more comprehensive history, test results, consults, actual radiology images, EKG strips, fetal monitoring strips, etc.—all in one e-chart accessible from anywhere. However, this may mean an overwhelming amount of PHI available to be read and considered before making clinical decisions. A hasty review could result in a critical piece of information being missed.

Also troublesome is the need to rely on information from other providers who may not be personally known to the physician. Are a stranger's diagnostic and clinical decisions trustworthy? Obviously, physicians should avoid ordering duplicate tests or repeating studies, but they will need to use their clinical judgment to determine what is best for the patient and document their rationales for these decisions.

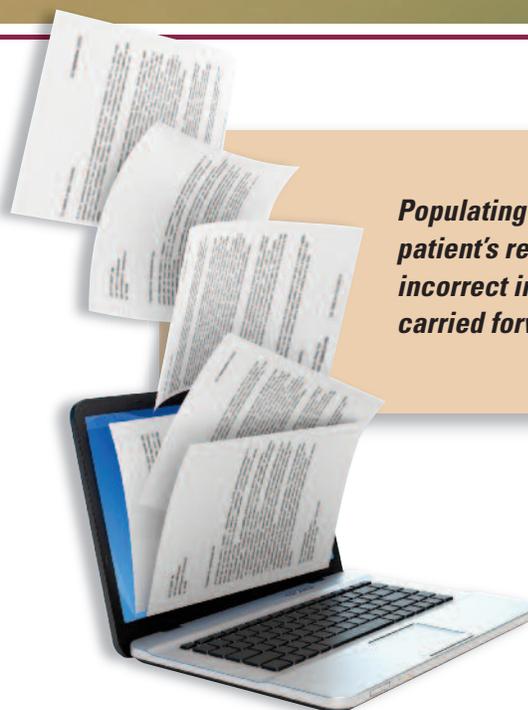
**Templates and forms** for routine patient encounters can result in a consistency not previously found in medical records. With paper charts, everyone charted differently and patient information could be found in different

locations, depending on who wrote the note or entered the data. Consistency and standardization saves time and makes access to needed information quicker and more efficient. However, not all patients are created equal, and not all patients' data fits well into the "Review of Systems" template. That is why work-arounds must be arranged.

Another situation to monitor with templates and forms in some systems is that patient data from one form will "automatically" populate to other forms within the same patient's record. This is usually a software programming feature intended to save time and, theoretically, prevent input errors. However, it could allow out-of-date or incorrect information to be inadvertently carried forward throughout the EHR. For example, a patient is seen for an acute UTI and that is noted in a template for that visit and appropriately treated. The system then repeatedly carries forward acute UTI for future visits, even though that condition is no longer present or requires treatment.

**Copy and paste** is the practice of healthcare providers simply copying patient information, progress notes, test results and inserting them again elsewhere in a patient's EHR rather than re-entering the data. A recent study in *Critical Care Medicine*<sup>1</sup> reviewed over 2,000 progress notes on 135 patients and found that 82 percent of all residents' notes and 74 percent of all attendings' notes contained at least 20 percent copied information. An earlier study<sup>2</sup> reported that signout and progress notes proved to be particularly redundant, with an average of 78 percent of residents and 54 percent of attendings duplicating information from previous documents.

This practice is fraught with potential patient safety and liability risks. Cases have been seen where copy and paste was



**Populating other forms within the same patient's record may allow out-of-date or incorrect information to be inadvertently carried forward throughout the EHR.**

done so frequently it perpetuated the dissemination of an inaccurate diagnosis among several providers. The practice also has serious insurance fraud and abuse ramifications if the system is using inappropriate, incorrect copied-and-pasted information as the basis for the practice's billing and coding. Any physician using cut and paste should review the data to ensure that it's still valid, correct, and applicable to the particular patient and the particular encounter. (See "5 Ways to Avoid Copy and Paste Errors" on next page.)

**Alarm fatigue** is a term that was first used when in-hospital nurses became so desensitized to the various alarms from ECG monitors, IV infusion pumps, O2 monitoring, bed alarms, low batteries, etc., that the alarms became ineffective. Too often, an alarm signaled something insignificant like a low battery or an IV line that became pinched when a patient changed position. Eventually, alarms were

rarely viewed as urgent, which delayed needed medical care when a real medical emergency set off an alarm.

The same type of syndrome has been seen in response to the many safety alerts and alarms built into

EHR systems—alerts about critical lab values, drug contraindications alerts, etc. Systems have multiple prompts to ensure tests like mammograms, PSAs, pap smears, etc., are ordered and scheduled at the appropriate time and to let a physician know when test results are in or overdue. Physicians can become so desensitized to these built-in alerts that they disable them, or find ways to work around them.

**The HIPAA privacy** issue presents a new potential problem. While this discussion focuses on non-HIPAA aspects of EHRs, it is important to be aware that the Omnibus Final Privacy Rule passed earlier this year<sup>3</sup> gives a patient the right to request that a claim for payment of a specific procedure or treatment NOT be sent to his or her healthcare insurer as a claim. Instead, the patient should be allowed to directly pay associated charges out-of-pocket for privacy reasons—without the information being submitted to insurance.

This final rule became effective on March 26, 2013, and covered entities have 180 days beyond the effective date to comply. Most EHRs available today aren't able to support these requests because claims are generated automatically and electronically sent to the patient's insurer

**Physicians can become desensitized or get so annoyed by built-in alerts that they ignore or disable them.**

for payment. Practices must determine how to address these requests to avoid disclosure of information against a patient's wishes.<sup>4</sup>

## Points to Remember

The issues addressed in this publication are just the tip of the iceberg. New exposures will continue to evolve with the expansion and continued development of technology, and the progression to a "paperless" healthcare industry.

Ideally, the practice will have someone on hand who is technology savvy and knowledgeable about the many laws and regulations that impact the collection and storage of PHI. But physicians must still be proficient with the EHR systems used daily. It is important to know what your system can do, what built-in features it provides to improve patient care and practice efficiency, and how to navigate through the record to find reports and clinical data from other providers or other facilities. 

<sup>1</sup> Thornton JD, Schold JD, Venkateshaiah L, & Lander, B. (2013). Prevalence of Copied Information by Attendings and Residents in Critical Care Progress Notes. *Critical Care Medicine*, 41(2): 382-388, February.

<sup>2</sup> Wrenn JO, Stein DM, Bakken S, & Stetson PD. (2010). Quantifying clinical narrative redundancy in an electronic health record. *J Am Med Inform Assoc* 17:49-53, January-February.

<sup>3</sup> 78 Fed.Reg. pp.5565, 5565 -5702, 1/25/2013. <https://federalregister.gov/a/2013-01073>

<sup>4</sup> It is also important to have a high-security system in place to protect patient information and practice business records.

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## Ways to Avoid Copy and Paste Errors



Scan to visit the risk management section of [psicinsurance.com](http://psicinsurance.com)

Tools available in EHRs that allow physicians to "copy and paste" or "copy forward" patient information should be used with extreme caution. So say guidelines on EHR documentation adopted in 2011 and revised in 2012 by Weill Cornell Medical College's Department of Medicine in New York. The guidelines, distributed to every incoming intern and fellow, advise physicians to:

- 1 Avoid copying and pasting of text from another person's note without attribution, as that is plagiarism and may constitute billing fraud.
- 2 Avoid repetitive copying and pasting of laboratory results and radiology reports.
- 3 Note important results with proper context and document any resulting actions. Avoid wholesale inclusion of information readily available elsewhere in the EHR because that creates clutter and may adversely affect note readability.
- 4 Review and update as appropriate any shared information found elsewhere in the electronic record (e.g., problems, allergies and medications) that is included in a note.
- 5 Include previous history critical to longitudinal care in the outpatient setting, as long as it is always reviewed and updated. Copying and pasting other elements of the history, physical examination or formulations is risky, as errors in editing may jeopardize the credibility of the entire note.

"Electronic Health Record Documentation Guidelines V 1.2, 2012-2013," Dept. of Medicine, Weill Cornell Medical College, New York-Presbyterian Hospital. In O'Reilly K. (2013). EHRs: "Sloppy and paste" endures despite patient safety risk. *AMNews.com*, February 4. Accessed March 1, 2013, [www.amednews.com/article/20130204/profession/130209993/2/](http://www.amednews.com/article/20130204/profession/130209993/2/)



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