

ClaimsRx

clinical & risk management perspectives

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Transitioning from Paper to Electronic Health Records

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Introduction

Electronic health records (EHR) hold great promise for improving patient safety and decreasing medical liability exposure, but being a successful EHR user doesn't happen over night.

Case One

***Allegation:**
Failure to diagnose the patient's brain tumor resulted in brain herniation and severe neurological injury.*

Patient's Treatment History

Successful implementation has many stages, including choosing the right system, transitioning to its use and then dealing with the ongoing issues that arise as technology and medical knowledge march on. This publication covers some of the considerations and decisions that support a successful transition from paper to EHR. To illustrate the potential risks associated with the transition phase, two case studies are presented. Both case studies involve a missed diagnosis that occurred while both paper records and EHR were in use (i.e., while a "hybrid" medical record system was in use — a medical record system that uses both paper and electronic medical records is referred to as "hybrid").

Diagnosis delay has been identified as a prevalent problem when transition involves a hybrid medical record system.¹ But practices that make a clean break from the paper record also must be prepared to handle safety and liability risks that arise during transition. The EHR transition checklist found at the end of this publication provides a preparatory structure for practices that are ready to take the plunge into the digital arena.

In February 2008, a medical practice installed an EHR system and began the process of transitioning from paper to electronic records. The office manager had a plan that she felt was appropriate. First, all of the pre-2008 records were moved to a storage space. All of the files to be shredded (the files of patients who had not been seen in the office within the past eight years) were separated and piled on the far right side of the storage space. The plan was then to:

- Hire a company to go to the storage space and shred the inactive patient records.
- Input the records of current (2008) patients immediately into the EHR.
- Input active patient records from 2000 forward into the EHR as resources permitted.
- Exclusively use the new EHR system for office visits starting on the "go-live" date, April 20, 2008.

After the plan was approved by the practice's CEO, the office manager called the shredding company and directed the shredding of the records in the piles on the right side of the storage space (i.e., the inactive patient files). Unfortunately, all of the records in the storage space were shredded. Consequently, the clinic was left with less than five months of patient history.

Although the transition plan called for an end to recording patient information on paper after April 20, providers having difficulty adjusting to the EHR were allowed to record patient information on paper. In some instances, providers would take notes on paper, later input information into the EHR, and then put the notes in a box of records designated for shredding. In other cases, providers gave their handwritten notes to the administrative staff for data entry assistance. Some of these notes were then filed away for data entry at a later time. During this period, therefore, both electronic and paper records were maintained for some patients, including the patient in this case.

Ten years earlier, a 40-year-old male patient presented to the clinic complaining of headaches and dizziness. Over the intervening years, he was treated by various family physicians (FPs) in the practice for headaches and a variety of other chronic conditions. Because his headaches were becoming increasingly severe and he felt his treatment at the practice was not effective, he self-referred to a neurologist at a different practice in May 2008. A head CT scan ordered by the neurologist showed a brain mass. The neurologist did not contact the patient's FP and did not contact the patient with the results — he wanted to discuss the findings personally at the patient's next appointment and he felt contacting the patient's FP was unnecessary because the patient had self-referred.

A week following the CT scan, the patient's son contacted the neurologist's office. He was told by a member of the staff that the scan was normal. The patient later cancelled his upcoming appointment believing the normal result indicated it was no longer necessary to treat with the neurologist. The neurologist never followed up; therefore, the patient was not informed that he had a brain mass.

The patient continued to present to the family medicine practice on a bi-monthly basis. His FPs believed the patient's symptoms were caused by depression and anxiety, and they treated him accordingly. On July 10, 2009, the patient lost consciousness at home and was transported to the emergency department. A head CT scan showed a large intracerebral lesion with diffuse edema in the same location as the tumor discovered in 2008. The tumor had increased in size. A resection of the tumor was attempted, but could not be completed. The patient sustained permanent neurologic sequelae including severe motor function impairment and aphasia.

The patient's wife and children filed a medical liability lawsuit in which they alleged that early in the patient's treatment the FPs should have referred him to a neurologist to determine the cause of his headaches and other brain-tumor related symptoms; that the neurologist should have informed the FPs and the patient about the tumor when he discovered it; and that the tumor should have been resected at an earlier date, which would have significantly improved the patient's outcome.

The neurologist settled for a significant amount during the early stages of the case. The case went forward against the FPs and the family medicine practice.

Discussion

One problem in this case was inadvertent destruction of the patient's pre-2008 records. But even if those records had not been destroyed, these defendants would still have had problems defending their care of the patient. For example, the clinic's electronic record indicated that the patient had complained of symptoms consistent with a brain tumor — severe headaches, dizziness, mental changes, blurry vision. However, nothing in the EHR indicated that the symptoms had been addressed. The FPs could not fully explain why brain tumor was not in the differential diagnosis, but the assumption was that a hybrid system had been in use and that information missing from the EHR may have existed in paper form. Unfortunately, no one could find the missing information because it had either been shredded or misplaced.

Another problem was the way the patient's EHR record printed out. The record printed out with the initials of the last person who viewed the record in the EHR, rather than the provider who had originally initialed the report. Also, the EHR had a "pull-backward" feature that inserted vital signs and lab results from 2009 into the 2008 chart entries. This made it impossible to tell who had treated the patient and what his lab values were.

A poorly chosen EHR system and inadequate training had resulted in a barely decipherable printed EHR. When printed out for litigation, the EHR documents were not only missing the information presumably contained in the misplaced paper record, they misidentified the treating physicians, had inaccurate lab data (due to the pull-backward function discussed above), and also reflected that the FPs did not fully understand how to use the system. Because only the EHR printout was produced for the plaintiff during litigation, the clinic was accused of either destroying or illegally withholding records that were detrimental to its case. Despite expert opinion that the FPs' care of the patient had probably met the standard of care, the multiple problems with the records prompted settlement of the case.

Many healthcare organizations have some degree of hybridization resulting from their paper-to-EHR implementation plan. As this case shows, maintaining both types of records, particularly when not well managed, can increase the risk of patient injury and malpractice liability exposure.³ Practices with a hybrid health record may benefit from keeping a chart posted that describes the location of specific document types. An example of such a chart can be found on the American Health Information Management Association (AHIMA) Web site at: http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_048419.hcsp?dDocName=bok1_048419 (accessed 1/19/2011).

Defining the Practice's "Legal Health Record"

An integral part of transitioning from a paper to EHR is defining the practice's "legal health record." In general, the legal health record is the record of healthcare services provided to an individual — it is the record that will be disclosed in legal proceedings when required. In a paper system, this is fairly easy: it is the information contained in the patient's medical chart. With an EHR, things are more complex.

When creating a legal health record policy for an EHR system, healthcare organizations must consider federal and state laws and regulations, the standards of accrediting agencies such as the Joint Commission and the requirements of various other entities and organizations that affect the process of delivering healthcare services. It is also important to confirm before going live that the legal health record prints in a readable format.*

* AHIMA. Update: Guidelines for Defining the Legal Health Record for Disclosure Purposes Available on the AHIMA Web site at: http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_027921.hcsp?dDocName=bok1_027921 (accessed 1/18/2011).

Choosing the Best EHR System for Your Practice

Choosing the correct EHR system for your practice can mean the difference between a successful and a failed EHR transition. Before talking to a vendor, it is wise to understand what you hope to attain by using an EHR, your tolerance for disruption and how this can help you better serve your patients. To address this, practices should undertake a needs assessment, a readiness assessment and a workflow analysis. These are the first three steps to a successful EHR selection process. "Things to Consider Before Purchasing an EHR System," a document in MyNORCAL, the policyholder-only Web site at www.norcalmutual.com, provides a thorough explanation of the necessary steps. Log onto your MyNORCAL account, click the Risk Solutions tab, then click the EHR Tools tab.

Case Two

Allegation:

The hospital's failure to have protocols in place to ensure the communication of abnormal test results between radiologists and requesting physicians resulted in a delayed diagnosis of breast cancer.

(Please note: This case study is based on a medical malpractice case that was tried in the federal court system. Only the hospital was a party in this suit. Nonetheless, the risk management and patient safety lessons and recommendations suggested by this case can be applied to any type of medical practice undergoing a paper to EHR transition.²⁾ As the following case shows, inadequate office follow-up systems can result in essential patient studies "falling through the cracks."

On April 18, 1994, a radiology practice started transitioning from its multi-part paper reporting system to a network-wide EHR system. A transition protocol had been put in place that required radiologists to immediately telephone the requesting physician as the primary method of reporting abnormal results. Three additional safety measures were put in place to protect against abnormal results' being lost or overlooked during the transition:

- 1) All radiology test results coded as "abnormal" triggered an automatically generated email message to the requesting physician advising of an abnormal test result's needing attention.
- 2) Abnormal results triggered a general notification of pending test results that appeared whenever the requesting physician logged on to his or her computer.
- 3) The system generated an abnormal test result report that was automatically printed daily in the requesting physician's clinic.

Note: This network of hospitals, clinics and other healthcare services had what is referred to as a "staged" roll-out of its EHR. In other words, departments were converting to EHR at different times. When the patient in this case was treated, the radiology department had been trained on the EHR, but the family practice department had not yet started its EHR training.

Patient's Treatment History

On May 5, 1994, a patient presented to the radiology department for a screening mammogram ordered by her family physician (FP). The mammography staff told her that the results would be sent to her FP, and that she could assume the results were normal if she did not hear anything within three to four days. The patient's mammogram showed a 1.5 x 1.2 cm nodular density with irregular borders in the right breast. The radiologist recommended needle localization and biopsy. His report was later transcribed into the hospital's new EHR system.

On the same day, per protocol, the radiologist called the FP's office to report the patient's abnormal mammography results. Because the FP was out of the office, the radiologist told the staff person who answered the telephone to have the FP telephone him and to expect the mammography report on the EHR system. The FP never returned the call; and the radiologist never followed up. The radiologist assumed that the FP was using the EHR system (i.e., that he would be informed of the result via email, computer notifications and the printout), and therefore he did not consider additional follow-up a priority. Unfortunately, the FP was not yet using the EHR. Furthermore, the report was not printed due to an EHR malfunction. Consequently, the FP was not made aware of the abnormal results.

Meanwhile, the patient, who did not hear further about her mammogram, assumed it was normal. In October 1994, while doing a self-examination she discovered a lump. She made an appointment with her FP. At that appointment the FP realized that he had not seen the results of the May 1994 mammogram. He was surprised when he found the abnormal mammogram report in the EHR system. The FP ordered another mammogram, which again identified

the suspicious lesion, which had doubled in size. The patient was later diagnosed with infiltrating carcinoma of ductal origin. On November 22, 1994, she had a lumpectomy and axillary nodes removed. Of the twelve lymph nodes removed, four were positive for metastatic disease.

The patient filed a medical liability lawsuit. Her allegations included:

- During the EHR transition period, the hospital failed to have a procedure in place that ensured that physicians ordering radiological reports would timely receive the results.
- The hospital failed to ensure that the radiologist knew which FPs were using the EHR and which were not.
- The hospital failed to notice and correct the print-out failure in the family practice clinic.
- The hospital failed to have a system in place that ensured requesting physicians would open and read abnormal results sent to them through the EHR.
- The hospital failed to have a procedure in place to directly notify patients about their mammogram results.

The hospital eventually prevailed in this lawsuit, but not until after significant effort and expense had been expended in its defense.

Discussion

This case illustrates how a seemingly well-thought-out transition protocol may not be fail-safe. It also foreshadows a possibly developing standard of care for paper-to-EHR transitions. When discussing whether the hospital's transition policies and procedures were consistent with the standard of care, the court stated, "Under the common law standard of due care, [the] hospital had the duty to implement a records delivery procedure during its transition phase that a hospital using ordinary prudence and reason would utilize under the same circumstances."¹ In other words, the court suggested that the hospital had a duty to minimize the risks associated with EHR implementation.

The court's reasoning is instructive. As EHR use becomes widespread, it is probable that other courts facing EHR transition-related malpractice claims will apply a similar analysis. Consequently, when transitioning from a paper to an EHR system, for both patient safety and liability risk management purposes, it is important to have carefully crafted policies and protocols in place that are designed to minimize such risks.

Please note that this case study derives from a 2000 federal court case. When the treatment took place in 1994, the Mammography Quality Standards Act (42 U.S.C. § 263b) did not yet require direct patient notification of mammography results; now it does. Consequently, a mammography patient today is not told to assume results are normal if she is not notified. Had this patient been informed of her abnormal result, this lawsuit probably never would have been filed. Although other radiological tests do not require direct patient notification, it is good risk management practice to do so.

The unique needs of each practice make planning and research critical to the successful conversion from paper to electronic records. Using tools such as checklists, grids and matrixes can provide structure during this complex process. The checklist below utilizes risk management recommendations:^{3,4,5,6,7} (Please note: This list is not meant to be all-inclusive; it is a place to start and should be customized to apply to your practice.)

Transition Team

Creating a transition team to effectively guide the process of transitioning from paper to electronic medical records and allay fears about changes to workflow is a crucial aspect of successful implementation.

- Identify a "physician champion" who has strong rapport with the administrative and clinical staff and can communicate transition goals while generating excitement about the process and outcome.
- Identify a team manager who will oversee the transition team and keep the process moving forward.
- The team manager and physician champion should form committees to create policies and procedures to manage and review the EHR implementation from start to finish.
 - Address individual responsibilities.
 - Create an action plan that includes definitive dates for implementation milestones and "go-live" dates.
 - Plan activities to obtain and maintain buy-in from the EHR end-users (e.g., demonstrations of the EHR system, frequent updates of implementation milestones and open lines of communication).

"Case Two" continued on page 6...

**Risk
Management
Recommendations/Transition
Checklist**
(continued)

- Assign designated “IT champions” as points of contact for team members to bring up their concerns and questions. These champions can then relay new and unresolved issues back to IT technical support for assistance in finding appropriate solutions.

Workflow Considerations

The failure of a practice to complete a workflow analysis prior to the go-live period can result in discouraged users falling back on using a paper record.

- Determine how the transition to EHR will affect workflow in both the administrative and clinical environment.
 - Visualize each step of the transaction.
 - Continuously asking “What if?” facilitates the discovery of many of the important issues during the planning stage.
 - Identify any barriers to the optimal use of EHR (e.g., length of office visits, computer terminal placement and/or lack of provider buy-in).
 - Consider assigning a “scribe” to a physician who either cannot or will not use an EHR.
- Determine whether conversion will be centralized using a designated team of scanners/data entry people, or decentralized using staff at multiple locations throughout the practice.
 - Use a sufficient number of appropriately trained individuals.
- Determine when historical records will be entered into the system (e.g., some practices input information prior to patient appointments, other practices convert all records at once).
 - Determine how departments/specialties/locations using paper records during a staged roll-out will access information entered into the EHR.
- Determine how paper records from outside the practice/facility will be entered into the EHR after the go-live date.
- Ensure that transition information will be adequately communicated to any provider who treats patients at your facility or refers patients to your facility.
- Determine how long the paper records will be available after the transition period.
 - Retain records for the number of years required by law if portions of the paper record have not been converted to EHR.
 - Clearly communicate a paper-record destruction plan and timeline throughout the practice.

Historical Patient Information

Choosing what to convert from paper charts into the EHR is one of the most crucial elements of the implementation phase.

- Determine which historical patient information will be transitioned to the EHR.
 - Balance workflow demands with patient safety — scanning too much can overwhelm resources, while failing to scan crucial information can increase patient injury and liability risk.
 - If you wish to meet the “meaningful use” requirements and qualify for CMS incentive payments programs, include necessary information, e.g., key patient demographic data, problem list, historical procedures, allergies and current medications. You can learn more about required data in “EHR Incentive Programs,” a document in the EHR Tools section of MyNORCAL, the policyholder-only Web site at www.norcalmutual.com. Log onto your MyNORCAL account, click the Risk Solutions tab, then click the EHR Tools tab.
 - Decide which information will be scanned and which will be entered as data.
 - Keep in mind that leaving particular patient information out of the EHR is a clinical decision that should be evaluated by someone with clinical decision-making and evaluation capacity.
 - Use data entry for information that needs to be cross-referenced in the clinical decision support system (e.g., drug allergies).

Training and Technical Support

Adequate training and/or technical support before, during and after the go-live period will improve the likelihood of a successful EHR adoption.

- Provide adequate training and technical support.
 - Include information regarding how misuse or non use of EHR after the go-live date may increase liability and patient safety risks.
 - Ensure healthcare team member EHR proficiency.
 - Conduct audits and follow-up on identified weaknesses.
 - Plan for additional training after the go-live date to ensure full functionality of the system.
- Provide an environment where healthcare team members feel empowered to request assistance.
- Have a technical support person from the vendor on-site when the practice goes live.

EHR Policies and Procedures

Prior to going live, EHR policies and procedures should be in place.

- Develop EHR correction, amendment, validation and completion of documentation policies and procedures (e.g., how will a supervising physician know that he or she needs to sign a treatment plan and how will the system notify the involved providers that the record is complete?).
- Define access restrictions (e.g., will healthcare providers only be allowed to view information about the patients on the unit where they are assigned? What kind of access will be granted to consultants, referring physicians, physicians doing committee reviews, researchers and patients?).
- Outline printing privileges so that staff knows when it is appropriate to print records out of the EHR.
 - Develop policies and procedures to ensure that no one writes or records patient information on printed records from the EHR or in the old paper chart after the go-live date.
- Create appropriate back-up procedures and test them.
 - Don't wait until the system crashes to test the back-up system.

The checklist for each practice's transition will vary. However, focus should never stray from ensuring that the quality and integrity of the health record remains intact during the transition process.

Conclusion

The transition from paper to electronic records is complex and exposes a transitioning practice to unique patient safety and liability risks. There is no standard approach for solving the issues that may impact the transition, but providers and institutions have a duty to make this process as safe as possible. Transition policies, protocols, checklists and work flow analyses can help a practice make the change from a paper to a full-functioning electronic system in the safest and most efficient manner possible.

For more information on implementing an EHR in your practice, please refer to "EHR Implementation," a document in the EHR Tools section of MyNORCAL, the policyholder-only Web site at www.norcalmutual.com. Log onto your MyNORCAL account, click the Risk Solutions tab, then click the EHR Tools tab.

Endnotes

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