Healthcare

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Electronic Healthcare Records: Maximize Benefits, Minimize Risks

Electronic healthcare records (EHRs) have revolutionized the practice of medicine, creating the potential for significant improvements in patient safety, clinical teamwork and operational efficiency. (See "How EHR Systems Can Improve Quality of Care" on page 2.) Similar to other technology, the effectiveness of EHRs depends upon many factors, both technical and human. A poorly designed or utilized system presents a range of potential hazards, including loss or compromise of important information, mechanized and excessively routinized care, data breaches and other security issues, as well as reduced defensibility of potential claims when electronic records fail to properly translate into hard copy.

The risk of error and other unintended consequences is especially acute during the period of transition from a familiar paper-based record to a new, multi-purpose electronic system. By learning more about the underlying causes of liability, leaders are better informed during this vulnerable period to select software that complements existing work patterns, devise sound operating procedures, train clinicians in safe practices, and establish audit mechanisms to detect and deter risky behavior. This edition of *Vantage Point*® features seven professional liability scenarios involving common EHR-related problems. It also offers a series of strategies designed to help risk managers train front-line staff in safe, appropriate use of EHRs.

In this issue…

Common Contributing Factors to EHR-related Lawsuits

- Incorrect data entry.
- Conversion issues emanating from a hybrid paper/electronic record.
- Failed routing of electronic data.
- System failures or outages, making data inaccessible.
- Unethical documentation practices involving copying and pasting of old entries.
- System design flaws that make routine clinical tasks burdensome.
- Insufficient user training and education.
- Incompatible or insufficiently integrated systems.
- User error (e.g., clicking on the wrong entry in a drop-down bar).

Source: Greenberg, P. and Ruoff, G. "Malpractice Risks Associated with Electronic Health Records," posted by CRICO, July 13, 2017.

Scenario 1: Information Lost in a Hybrid Record

A community clinic, in partnership with a hospital-based healthcare system, is transitioning from hard-copy records to the hospital's EHR format. Although medication allergies for pediatric clinic patients have been input into the system, retrieving this information requires two additional screen interfaces. Nurses are critical of the EHR module, often refusing to make full use of the new system, which they perceive as cumbersome. During this period, a 4-year-old with a history of severe allergic reactions to a specific antibiotic presents to the hospital emergency department (ED) for treatment of a bilateral ear infection. The allergic reaction is well-documented in the clinic's paper record, but it is not known to the non-parent guardian who accompanies the child to the ED. The nurse's inquiry regarding known allergies is, therefore, negative, and the nurse fails to check allergy status in the EHR. A physician subsequently prescribes the antibiotic, triggering an anaphylactic reaction in the child and a week-long hospitalization for respiratory support.

The introduction of EHRs can have a dramatic and possibly disruptive effect on clinical processes. Many organizations utilize "hybrid" records – part paper, part digital – during the transitional period, while integrating the EHR system into existing work practices.

During this hybrid phase, staff members' basic computer skills and readiness to navigate between paper and electronic formats must be considered. Lack of transitional planning and training may result in confusion and errors, potentially leading to breakdown even before the EHR system is fully implemented. Risk control measures can help mitigate areas of exposure as an organization transitions to the EHR environment.

Lack of transitional **planning** and **training** can trigger **confusion** and **errors**, potentially **leading to breakdown** even before the EHR system is fully implemented.

Consider the following risk management recommendations, among others:

- **Determine the components of the healthcare record that will remain in paper form during the transition,** and devise policies to protect and preserve data maintained in a hybrid state.
- **Identify areas of possible duplication across paper and electronic systems,** and reduce or eliminate potentially confusing redundancies, especially in the high-risk areas of medication prescription and administration, allergy notation, and follow-up on laboratory and diagnostic reports.
- **Establish written parameters for use of paper notes in the hybrid record,** in order to reduce the risk of missing or inconsistent electronic documentation.
- **Ensure that staff members possess necessary IT competencies before proceeding with EHR implementation.** Consider evaluating staff skills and documenting the results.
- **Acknowledge the increased workload implications of a newly implemented EHR system,** providing appropriate support in the form of an IT call center, additional hands-on training and/or reduced patient loads for clinicians during the transition period. If necessary, assign additional IT staff to clinical settings to assist during the transitional period.

How EHR Systems Can Improve Quality of Care

By complying with the federal mandate regarding meaningful use of information technology, healthcare providers and facilities can seek to:

- Improve coordination and continuity of care.
- Reduce communication-related errors.
- Increase staff efficiency and productivity.
- Enhance legibility of documentation, thus strengthening legal defensibility in the event that a claim arises.
- Increase consistency by encouraging use of clinical prompts, decision-making trees and documentation templates, among other electronic aids.
- Bolster quality improvement efforts by more effectively compiling health outcomes data.
- Facilitate electronic communication between providers and patients.

Scenario 2: Flawed Design and Risky Workarounds

A 53-year old patient with an elevated body mass index (BMI) presents to an ambulatory surgery center for routine arthroscopic surgery. The center has a sophisticated EHR system designed to prevent physicians from ordering medication doses in excess of established thresholds, which are set using the low side of a normal adult BMI. To ensure a therapeutic level in this patient, the surgeon decides to circumvent the system by ordering multiple separate doses of the same medication. The pharmacy department fills each order and all doses are administered at once, despite a standardized pre-op order for a dosage one-fourth less than the given amount. The patient sustains an ototoxic injury, resulting in permanent partial hearing loss.

Clinical users will seek creative ways to work around an EHR system if its functions lack flexibility or fail to reflect and support real life clinical practice. Left unmonitored, such improvisations can seriously undermine patient safety. To avoid this hazard, EHR implementation plans must balance user needs and preferences with patient safety considerations.

Quick Links

- "Electronic Medical Records: Finding Solutions to Clinical and Litigation Risks/Practical Applications in the Emergency Department," from CNA Insurance. October 2017.
- Health IT Safe Practices: Toolkit for the Safe Use of Copy and Paste, from the Partnership for Health IT Patient Safety. February 2016.
- "Lawsuit Claims EHR Dangerous to Patients, Could Affect Hospitals," *Relias Media*, April 1, 2018.
- Paterick, Z. et al. "Medical Liability in the Electronic Medical Records Era," *Proceedings* (from Baylor University Medical Center), October 2018, volume 31:4, pages 558-561.
- Rehr, C. et al. "Determining Inappropriate Medication Alerts from "Inaccurate Warning" Overrides in the Intensive Care Unit," *Applied Clinical Informatics*, 2018, volume 9:2, pages 268-274.
- Vanderpool, D. "EHR Documentation: How to Keep Your Patients Safe, Keep Your Hard-Earned Money, and Stay Out of Court," *Innovations in Clinical Neuroscience*, July-August 2015, volume 12:7-8, pages 34-38.

Consider the following risk management recommendations, among others:

- **Pilot new EHR modules** in order to identify glitches, make corrections, and increase staff member proficiency and sense of ownership.
- **Encourage EHR users to provide comments, suggestions and other input on an ongoing basis.** Document follow-up on all verbal and written suggestions and complaints.
- **Consider scheduling regular staff forums to educate staff about EHR and sound communication practices,** as well as to encourage questions and discussion.
- **Monitor system interfaces for changes in user behavior.** If a common workaround is detected, instruct clinicians to utilize recommended procedures until the risks and benefits of the alternative method are thoroughly understood and either approved or prohibited.
- **Analyze problematic clinical processes to better understand why end-users may deem it necessary to circumvent standard procedures.** For an overview of process analysis and workflow redesign, see Workflow Process Mapping for Electronic Health Record (EHR) Implementation on the HealthIT.gov website.
- **Seek input from system vendors and peer organizations** regarding viable solutions to the problem of potentially hazardous workarounds.
- **Retain vendor guidebooks, resources, protocols and programs for reference** in the event of a professional liability claim involving system design or utilization.

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Scenario 3: Provider Overrides of Decision-support Alerts

A post-op cardiac bypass patient is handed off to a cardiologist upon transfer from an intensive care unit to a telemetry step-down unit. The healthcare setting's EHR is designed to issue alerts for certain handoff requirements and clinical decisions, including desired medication orders, treatment of pending laboratory values and preferred referrals. On the morning of post-op day three, the cardiologist receives a total of 63 alerts from the EHR system, including a warning of a critically low serum electrolyte level in the patient. The condition goes untreated and the patient subsequently develops a fatal ventricular arrhythmia. The physician later testifies that he missed the morning potassium level due to an excess of computer-generated alerts.

Electronic record systems often include a variety of diagnostic algorithms, prompts, alerts and other decision-support tools and warnings. Effective intervention depends upon users having the time and ability to process this information, which is not always possible in a busy surgical or medical setting. One risk of automated warning systems is the phenomenon known as "alert fatigue," in which the flood of reminders causes practitioners to miss genuinely urgent messages, thus setting the stage for errors of omission and consequential harm to patients.

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Consider the following risk management recommendations, among others:

- **Seek input from providers ahead of time** regarding their decision-support needs and preferences, and document all alert-related training and orientation.
- **Select software that automatically directs alerts and other support interventions to the appropriate clinicians,** and that avoids repetition by acknowledging compliance with requested actions.
- **Streamline the process of responding to alerts,** so that clinicians are not required to click more than once, scroll down or visit additional pages.
- **Ensure that alerts are proportional to the identified clinical risk** – e.g., alerts regarding preferred dietary changes should not express the same urgency as a warning about a prescribed drug's potential for liver toxicity.
- **Clearly "label" all alerts,** using a tiered system that reflects the type and frequency of the alert – e.g., minor/moderate/severe or routine/urgent/critical.
- **Require providers to input a reason for overriding a critical alert,** using either a free-text box or a drop-down menu. Avoid "click-to-dismiss" features.
- **Consider a system feature that links the clinical rationale for overrides to alternative interventions,** in an effort to capture a record of the provider's decision-making process.
- **Audit past occurrences of alert overrides**, in order to assess their clinical relevance and the extent of patient harm.
- **Conduct an organizational assessment of alert override practices,** analyzing both type and frequency, in order to determine if unnecessary alerts can be deactivated.
- **Monitor the rate of overrides following any deactivation decision** to determine if the implemented action effectively reduces the occurrence of alert fatigue.

Scenario 4: Inappropriate Copy-and-paste Practices

An elderly patient is admitted on a weekend for treatment of a large pressure injury abscess. An admitting resident notes in the EHR that the abscess requires drainage and possible surgical intervention. The surgery proceeds, but the intern fails to note the procedure in subsequent documentation, instead copying and pasting the original entry note for the next two days. The infectious disease team consults on day three and, unaware of the surgical drainage and improvement, makes an unnecessary and deleterious change in the patient's antibiotic regimen. As a result of the error, the patient remains hospitalized for diarrhea and dehydration, and requires skilled nursing care for several weeks post-discharge.

Clinicians commonly use copy-paste and copy-forward functions to document information within EHR systems. The practice – often referred to as "cloning" – involves selecting some or all of a prior note and replicating it in another entry in the EHR, or repeatedly copying forward a prior notation to create a series of entries. When appropriately utilized in accordance with standardized guidelines, this practice can save time for busy providers without compromising care. However, reflexive use of such shortcuts may result in serious patient mishaps, as well as violation of HIPAA privacy rules, federal and payer audit requirements, and fraud and abuse regulations.

Cloning also may adversely impact the ability to defend professional liability claims by raising questions about the record's credibility, consequently requiring costly forensic analysis in order to refute allegations of negligent dissemination of erroneous information. The misuse of copy-paste and copy-forward functions creates vulnerabilities when patients receive care from multiple healthcare providers who primarily rely upon the EHR to communicate patient diagnostics and treatment plans. In the absence of direct communication between treating providers, erroneous or outdated information may be mistaken as truthful, thereby influencing clinical decision-making and potentially exposing providers to claims based upon delayed diagnosis, failure to diagnose and misdiagnosis. (See Chitalia, S. and Rubin, J. "EHR in Malpractice Litigation: How "Cloning"and the Audit Trail Can Lead to Unnecessary Claims," *The Risk Management Quarterly*, 2018, volume I, pages 23-33.)

Consider the following risk management recommendations, among others:

- **Incorporate regulatory and industry standards regarding the proper use of copy-paste and related functionalities into IT governing policies,** EHR documentation guidelines and training programs. (See ECRI Institute's "Copy/Paste: Prevalence, Problems, and Best Practices.")
- **Avoid repetitive copying and pasting when documenting high risk items,** such as laboratory results, radiology reports and drug formulations.
- **Review and update any shared information found elsewhere in the EHR before pasting it into current entries,** especially problem lists, diagnoses, allergies, current medications and history relevant to ambulatory care across the continuum.
- **Expressly prohibit the following risk-prone functions:**
  - Copying-pasting text from another clinician's note without proper attribution, which may constitute medical plagiarism and lead to allegations of billing fraud.
  - Deleting original source text or data and inserting it elsewhere in the record, thus altering the initial entry and compromising documentation integrity.
  - Carrying forward information – such as prior medical history or diagnostic results – that is readily available elsewhere in the EHR, which creates clutter and may adversely affect the readability and usefulness of the record.
- **Monitor providers' copy-paste behavior** and institute corrective action when the following "red flags" are observed:
  - Copying of outdated and/or redundant information.
  - Inconsistent progress notation.
  - Unnecessarily long progress notes (AKA "note bloat").
  - Notes that cannot easily be authenticated, dated or attributed to an original author.
- **Measure the level of compliance with copy-paste protocols for clinicians who create notes in the EHR,** and include findings in the annual performance review process. To learn more about the prevalence of copy-paste misuse, see Miliard, M., "EHRs Are Overflowing With Copy-and-paste Records, JAMA Study Shows," *Healthcare IT News*, May 31, 2017.
- **Consider disabling the EHR system's copy-paste function,** as some hospitals have done, if inappropriate copying and pasting of entries becomes a chronic problem.

Lesson 5: Template Documentation and the Risk of Default Notation

A physician assistant completes a history and physical on a newly admitted 65-year-old patient, inputting findings into the EHR via a template designed for a healthy male adult. However, the patient has a significant cardiology history and requires drug prophylaxis to prevent deep vein thrombosis. The template prompts the physician assistant to make only routine inquiries regarding cardiac health, without inquiring further about the patient's current condition and treatment. The supervising physician subsequently logs into the record and evaluates only proof of positives, while failing to confirm negative findings. He electronically signs the documentation, neglecting to order and carry forward the patient's existing medication regime. Two weeks later, the patient is hospitalized for an acute pulmonary embolism, at which time the oversight is detected.

EHR vendors offer various tools – including template documentation and population via default – designed to make writing notes easier. Templates feature predefined text options targeted to specific conditions and body parts, while populating via default involves one-click data entry to indicate normal status. When using these forms of notation, providers must enter negative or out-of-the-ordinary findings manually, a practice known as documentation by exception (DBE). Both options carry a high risk for "cloned" documentation, which can render the record of a 70-year-old patient similar in content and appearance to that of a 20-year-old. Such generic records may lead to allegations of deficient care and thus may be difficult to defend in the event of litigation.

Consider the following risk management recommendations, among others:

- **Assess whether vendor-developed templates adequately support recommended work practices.** If they do not, adjust them to accurately reflect current protocols, standards and regulations.
- **Include a variety of input controls to facilitate the capture of all relevant findings,** both normal and abnormal. Possibilities include right-left-bilateral confirmation, positive/negative notation, and multiple-choice text and number features.
- **Incorporate voice-recognition and text-entry tools to document subjective observations** and to enhance future recognition of EHR entries in the event that a malpractice action is filed years after the date of care.
- **Create a section within templates for relevant past medical history, positive findings on exams and answers to "red flag" questions.** For example, on a strep throat template, include prominent prompts for fever, headache, rash, and a history of heart valve or kidney problems.
- **Perform quality audits to track incidence of "scribing,"** i.e., the overwriting of another practitioner's authenticated notes. Audits also should identify clutter-prone templates and DBE functions.
- **Prohibit IT staff from tampering with the EHR's audit trail capability.** Explain that the function is necessary and does not significantly slow down the system.

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Lesson 6: Stagnant Problem Lists

A primary care clinic in a large healthcare delivery system carries over a patient's existing problem list from an inpatient EHR format, which contains more than two dozen entries. The patient's aneurysm history is located near the end of the long, scrolling list. During a medical procedure a year later, the patient's aneurysm bursts, with fatal consequences. The specialist later testifies that he glanced at the problem list at a pre-op visit, but failed to read it in its entirety, as he considered much of it to be obsolete and inconsistent with the presenting clinical picture.

Accurate patient problem lists are essential to effectively manage patient populations and provide care across multiple sites. However, keeping problem list data relevant and up-to-date can be a challenge, due to the number of disciplines and services – ranging from health IT, medical staff and nursing services to billing, quality management and clinical departments – involved in the compilation process. For this reason, problem lists tend to accumulate a wide variety of symptoms, health factors, diagnoses and ICD code descriptors. If not regularly reviewed and updated, lists may become pervaded by obsolete and irrelevant information, potentially compromising quality and continuity of care.

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Consider the following risk management recommendations, among others:

- **Clearly define the purpose and scope of the problem list in all healthcare settings,** focusing on these critical functions, among others:
  - Facilitating continuity of care between patient visits.
  - Recording medical conditions for treatment and reporting purposes.
  - Coordinating communication during patient transitions between settings and care providers.
- **Create a written procedure for developing problem lists,** and also for updating and reconciling them in the following medical situations, among others:
  - Primary care: at the end of each episode of care and annually, at a minimum.
  - Internists and specialists: at the end of each episode of care.
  - Attending physicians: upon discharge from an inpatient or outpatient setting.

  For additional information, see AHIMA's "Problem List Guidance in the EHR. Appendix A: Sample Policy and Procedure Template."
- **Authorize only selected individuals to make or change entries in patient problem lists,** and instruct them to use an approved standard vocabulary for problem list notation.
- **Strictly prohibit the use of problem lists as a source of billing data,** a tool for revenue management purposes or a substitute for a final diagnosis list in discharge summaries.
- **Establish timeliness requirements for problem list entries and audit activities.** For an analysis of problem list management practices and ways to improve compliance, see Wright, A. et al. "Problem List Completeness In Electronic Health Records: A Multi-site Study and Assessment of Success Factors," *International Journal of Medical Informatics*, October 2015, volume 84:10, pages 784-790.

Lesson 7: Mismanagement of Ancillary Data

A small hospital implements a new EHR module that permits outside laboratories to input test results directly into the system. Nurses assume that physicians are reviewing the results in electronic form, although the module does not require end-users to verify receipt and review of the results. Following adoption of the module, a patient dies of overwhelming sepsis. In the discovery phase of subsequent litigation, a request is made for the hospital's written policy and procedure regarding staff review of lab reports concurrent with their receipt. However, no such policy exists under the new system. The jury is later instructed to infer that the hospital failed in its basic duty to oversee and direct safe, coordinated care.

As EHR capabilities evolve, user interfaces will expand, especially in the management of diagnostic data. The potential for miscommunication exists when organizations fail to reconcile digital recordkeeping processes with older methods used to perform checks and balances on critical data – such as imaging studies, laboratory values and radiographic exams. As improvements are made in the EHR system to better account for the flow of laboratory, radiology, pharmacy, financial and other ancillary data, providers and staff from all departments and disciplines must remain cognizant of outdated documentation and reconciliation processes. Missing or overlooked data may indicate poor system integration, which, if left unchecked, can result in potential patient care lapses and associated liability.

Consider the following risk management recommendations, among others:

- **Budget sufficient time, administrative effort and resources to integrate EHR with ancillary and financial data systems.** Be aware that the process can be expensive, challenging and time-consuming, often taking six months or more.
- **Select an EHR system with a proven track record** in comparable practice or facility settings, and ask administrators of these facilities about their experience integrating diverse data sources.
- **Rigorously test system interfaces** and run mock reporting trials of sample data to foresee and resolve potential integration problems.
- **Design EHR systems to capture and display thorough patient histories,** including recent lab results and office visits, as well as the results of mammograms, colonoscopies, and other preventive and diagnostic tests and procedures.
- **Engage an experienced data analyst to oversee the conversion from paper-based to electronic reporting,** in order to ensure that all user needs are understood and addressed.

While EHRs can be a powerful tool for capturing healthcare information, they also may pose their own set of risks to both patients and providers. The safeguards and strategies described in this publication can help organizations avoid potentially costly missteps and ensure that their EHR investment pays a dividend in terms of enhanced patient safety, productivity, regulatory compliance and reduced liability exposure.

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