Patient Safety Alert

Patient Identification Risks and the Intersection of Electronic Health Records

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Patient identification errors can lead to patient harm in all areas of medicine regardless of provider, specialty, or practice location. Identification errors can result in incorrect or incomplete information in a single patient record, the creation of multiple records for a single patient, and unreconciled health record information. These issues and failures open the door to delayed, incorrect, and even unnecessary care that can contribute to adverse events leading to potential harm. Research has identified that wrong patient orders occur as frequently as two per 1,000 orders. Recognizing the scale of this problem, the Joint Commission has listed patient identification as a *National Patient Safety Goal* since 2014.[7]

Computerized physician order entry (CPOE) systems, electronic health records (EHRs), and bar coding/scanning systems have allowed for increased awareness of patient identification errors; however, they have also highlighted the role health information technology can play in contributing to identification errors. While technology can introduce its own set of risks, strong EHR system design also has great potential to mitigate patient harm. Given the clinical demands placed on healthcare providers, and the inherent production pressures imposed by an increasingly complex healthcare delivery environment, designing effective patient safety interventions will require attention to impact on workflow. IT strategies that harness technology to facilitate accurate identification can play an effective role in mitigating the risk associated with patient misidentification.[8]

In a study that followed provider eye movements while using CPOE, no providers looked at a second patient identifier before selecting a patient from a list, even when two patients had the same last name and similar first names.[2] Improvements in patient identification can best be achieved by examining the use of current technology more closely, anticipating future developments, and finding new ways to facilitate accurate identification.[3]

Goals for improved patient identification include: the elimination of inappropriate, delayed, or unsafe care resulting from erroneous or inadequate patient information; high reliability patient identification processes; and accurate codification and communication of protected health information. Technology can enhance the ability to correctly identify and match the

individual with their intended care plan interventions and EHR documentation.

Patient misidentification remains a latent systemic risk and requires continued vigilance to avert potential harm. Identification errors occur for myriad reasons and since no singular solution exists, a multi-pronged approach for safer patient identification is essential. Consensus

recommendations suggest developing solutions which target both attributes and technology. Attributes address the information-gathering components of capturing patient identification data, including the entry fields and formatting available. Technology elements address ways technology/IT infrastructure can be set up to deliver safer care.[1]

Case Examples

MULTIPLE RECORDS FOR THE SAME PATIENT

A 72-year-old male patient with a prior admission to the receiving hospital facility, was accepted as a hospital-to-hospital transfer. The patient was admitted under another patient's medical record number attributable to having the same name and similar date of birth. A duplicate registration was then performed under the correct medical record number. During the patient's stay, the care team was accessing both records. The error was not realized until the second hospital day when a lab test result was inconsistent with the patient's prior medical history.

Review of this case identifies the roles that both human and system factors played in the event. A detailed analysis highlighted inconsistencies in the patient admission and verification process at different access points within the hospital specific to failures to verify a second patient identifier. Further analysis identified system factors contributing to the existence of two active records, namely that duplicate patient records could not be merged until after discharge, as a merge of two active records would void all active patient orders.

WRONG PATIENT, WRONG ORDERS

Patient #1, a non-English speaking patient, presented to the Emergency Department for a wound check. The surgeon-on-call was contacted by the ED and reviewed the incision. Orders for blood work and IV medication were entered by the ED provider at change of shift and

the patient's discharge order was entered ten minutes later.

Patient #2, also a non-English speaking patient of similar age, was being evaluated for an abscess in the adjacent bay of the ED. The patient's nurse realized during shift report that the medications and lab work that were supposed to have been ordered for Patient #2 had been inadvertently ordered for Patient #1. Patient #1 received incorrect labs/medication, and Patient #2 experienced a delay in receiving critical medication.

A causal analysis identified multiple human and EHR factors contributing to this case. An exploration of the human factors included ineffective communication among providers and with the patient. Communication continues to remain a ubiquitous causative factor among adverse events. Establishing clear communication and escalation channels should be a priority. In this event, ineffective communication was more prominent due to a higher patient-to-provider ratio during a particularly busy shift, making direct verbal team communication difficult. A deeper dive into the technological factors, which played a role in this situation, suggest areas of concern including the ability within the EHR to have more than one patient record open at a time. When the provider entered the discharge order, they were not alerted to the fact that the patient had active orders already in place.

The AMC PSO recently convened a multidisciplinary group of stakeholders across its membership to review and discuss strategies for safer patient identification. Analysis of aggregated AMC PSO data revealed themes

from patient misidentification events. The themes are highlighted in Table 1.

TABLE 1

THEMES IDENTIFIED IN ANALYSES OF WRONG PATIENT IDENTIFICATION EVENTS
Inconsistent verification of two identifiers
CPOE: Multiple patient records open
Inaccurate selection from drop down menus
Multiple providers/handoffs
Distractions/multi-tasking/interruptions
Lack of availability/use of interpreter services
Inconsistent application/use of ID bracelets
Bypassing safety procedures due to • hierarchical issues • production pressure • patient satisfaction surveys
Specimen mislabeling
Radiology orders and EHR intra-operability

Literature research has identified additional causes of patient identification error listed in Table 2. [9]

TABLE 2

CAUSES OF PATIENT IDENTIFICATION ERROR
Checking patient's wristband is considered the domain of nurses
Repeatedly asking a patient his or her name can be viewed as disruptive to relationship or professionalism
Transposing numbers when typing medical record numbers
Being overwhelmed, overworked, or overtired
Frequent interruptions
Patient answers to wrong name
Transport staff rarely check patient's identity
Wrong patient selected from drop down list of names

Risk Mitigation Strategies

AMC PSO MEMBER HIGHLIGHTS

Grant funding from CRICO's Patient Safety Grant Program is supporting the development and research of two patient identification projects directed towards reducing patient misidentification.

Addition of Patient Photos to the EHR to Reduce Wrong Patient Orders in the Emergency Department

The aim of this project is to develop and implement an efficient Emergency Department process to obtain and import patient photos into the EHR and examine the impact on wrong orders. With the fast paced nature of the ED environment, it is not uncommon that providers frequently have more than one patient record open at a time.

The targeted solution is to display a patient photo in the EHR header. Data is being collected through the use of an algorithm which monitors when a provider places a patient order and then within 10 minutes retracts the order, thereafter re-entering the same order on a different patient.

Implementation of Patient Photos to the EHR to Reduce Order Entry Errors

The aim of this study is to assist providers in patient identification during order placement, thereby avoiding wrong patient order entry in the Emergency Department. This study targets the inclusion of patient photos in the banner of the EHR (Figure 1). Early results of this initiative have resulted in a decrease of reported safety events involving wrong patient orders.

Figure 1

Other approaches to reduce wrong patient errors collected from member discussion and contemporary literature are listed below in Table 3.

The AMC PSO also supports the use of the SAFER Guidelines, produced by the Office of the National Coordinator Health Information Technology, as a tool to assess opportunities for improvement for EHR.

TABLE 3

RISK MITIGATION STRATEGIES
Dialog box (with full patient name, date of birth, and medical record number) displayed with forced delay of 2.5 seconds at beginning of each ordering session, requiring providers to verify the patient
EHR alert when patients with same or similar names are in the department
Patient room numbers watermarked on EHR[12]
In departments with complex physical spaces, patients are only displayed that are located in that specific unit space
Use of patient check-in kiosk where patient photo is acquired
Provider has to re-enter patient's medical record number, name, and date of birth before an order is placed
EHR alerts providers when inappropriate orders are placed (i.e., HCG test for males)
In the NICU, infant patients are provided with a unique name consisting of their sex and mother's name[1]
For critically ill and mass casualty patients arriving to the ED without identification, use a naming strategy with three characteristics that include that the patient was unidentified, the patient's sex, and a unique component that is intuitive for clinicians to remember such as a color.[6]

Conclusion

Patient misidentification can result in serious harm. Strategies to mitigate this risk require more than a single approach and depend on collaboration and prioritization by all members of the healthcare delivery team.

The AMC PSO is hopeful that the strategies offered in this alert will assist members in identifying areas of risk with patient identification as well as possible solutions.

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