

Patient Identification Errors: A Systems Challenge

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The Cases

The following four events involving five patients all involved incorrect patient identification in a large tertiary care hospital; all cases were reported to the hospital's patient safety committee within a 4-week period. Together, these cases serve to highlight several important systems issues.

Event #1 involved a 68-year-old woman who presented to the emergency department (ED) from the ambulatory clinic with nausea, vomiting and altered mental status. She had a history of untreated deep vein thrombosis (DVT) in the right upper extremity and had erythema and signs of possible cellulitis. The emergency medicine physician ordered non-contrast computed tomography (CT) scans of the abdomen/pelvis and head. The patient was transported to radiology and mistakenly received a CT of the right upper extremity with contrast, which had been ordered for another patient with the same first name (but a different surname).

Event #2 involved two patients whose ED visits overlapped in time. Patient #1 was a 23-year-old man found unconscious outside a bar with multiple facial injuries and bruises on his chest and abdomen. Patient #2 was a 21-year-old man with facial injuries and head pain following a motor vehicle accident. These two patients, both with head and facial injuries and of similar age, were admitted to neighboring rooms in the ED and orders for CT of the head, face, and cervical spine without contrast were placed for both; each patient's scan was mistakenly performed under the other patient's name, and the wrong results appeared in both patients' charts. A CT of the abdomen and pelvis was also ordered for Patient #1 but was performed on Patient #2, for whom no additional CT had been ordered. Upon receiving all the CT results, the ED team recognized that the results were not consistent with physical exams and, subsequently, a CT of the abdomen and pelvis was appropriately carried out on Patient #1 and all results were correctly relabeled.

Event #3 involved a 2-year-old patient who presented to the ED, subsequently underwent surgery, recovered in the post-anesthesia care unit (PACU), and was admitted to the pediatric unit late in the day. The next day, the night shift RN discovered the child had another patient's identification (ID) band on her wrist. The ID band belonged to an 8-month-old baby boy who also had been seen in the ED the previous

day but had been discharged home later that day.

Event #4 was a 21-year-old female patient seen in the ED. While receiving an electrocardiogram (EKG), this patient was found by the EKG technician to have another patient's ID band on her wrist. The ID band belonged to a 60-year-old male and had been placed on the patient by the triage nurse.

The Commentary

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Background and significance

Patient identification seems like a simple cog in the complex framework of a healthcare facility. However, errors in this simple process, although often harmless, can sometimes result in harm or distress to patients and their families. In one such case, an intern intending to call the family of a deceased patient inadvertently called the wrong family and delivered the devastating news to them.¹ The mistake, although corrected only twenty minutes later, caused unnecessary pain and trauma to that family. Fortunately, in the four cases presented in this report, the identification errors were discovered relatively soon after the mistake was made and there were no adverse effects on the patients involved (other than the inconvenience of additional testing). Nevertheless, even these minor misidentifications can be taxing on patients and jeopardize their safety, and they can also result in significant costs for the hospital by wasting time and resources on unnecessary tests and procedures.

The frequency of patient misidentifications can elude detection due to the variable nature of resulting outcomes. Nevertheless, attempts to quantify the incidence of these errors have been made. A qualitative analysis performed on 227 RCA (root cause analysis) reports from the Veterans Health Administration, found that 182 of 253 errors in the test cycle were attributable to patient misidentification.² Of 503 healthcare executives across the United States surveyed for the 2016 National Patient Misidentification Report published by the Ponemon Institute, 64% claimed that patient misidentification errors happen more frequently than the reported industry standard of 8-10%. The same report states that, on average, a hospital loses \$17.4 million per year in denied insurance claims associated with misidentification.³

The four events comprising this case all originated in the Emergency Department (ED) and illustrate typical errors of patient misidentification that can occur for various reasons. For example, similarities in patient names and proximity of rooms can increase the likelihood of patients being misidentified. However, a review of 1500 wrong-patient electronic records performed at New York Presbyterian Hospital revealed that only 3.2% of the errors involved patients with similar identifiers.⁴ Another study instead implicated the handling of too many patients by one staff member, coupled with numerous distractions, for more than 80% of the wrong-patient electronic orders examined.⁵

The last two events in this Case provide further evidence that even when patients' identifiers are not similar, distracted handling of patient information may result in mislabeling patients with the wrong wristbands. These errors are more likely in pediatric patients since small children and newborns are not able to identify themselves to healthcare providers and, in the absence of family members to assist in the

process, errors in identification may arise.⁶ These events suggest that very young and cognitively impaired patients may be targeted for special attention by care providers to avoid identification errors.

System concerns

Some critical system issues that may contribute to increasing the likelihood of errors relating to misidentification have been identified. Firstly, the environment in the Computed Tomography (CT) suite includes many sources of interruptions that may make it difficult for staff to follow proper patient identification practices. Interruptions in a healthcare setting can be distracting and jeopardize patient safety.⁷ Furthermore, communication between the Emergency Department and the CT suite is often inefficient and unclear. One report states that 11% of preventable adverse patient safety outcomes are a result of ineffective interdepartmental communication.⁸ Finally, the centralized printing of patient identification band labels in one location in the Emergency Department appears to be a source of errors, as there may be no clear demarcation between different patients' bands.⁹

Approach to improving patient safety

Given these factors that influence identification error rate, there are some general actions that could be taken immediately to prevent errors in the future. Hospitals with the capacity could use staff instead of volunteers for transport assignments, for example. A joint ED/Radiology workgroup to explore ways to improve the safety and efficiency of transport between ED and Radiology also could be established. Utilizing the electronic medical record to flag patients who are ready to be scanned could decrease errors as well. Use of bar code scanners to decode the patient's wristband and confirm their identity before performing a procedure, as is done in some hospitals, could additionally reduce errors.

Increasing staffing for CT during busy times in the late afternoon and evening would help maintain throughput without compromising patient identification in the CT suite. Another possible solution is to have a technologist in another area process CT images to improve the safety and efficiency of scanning. Furthermore, the pre-scanning workflow could include an uninterrupted pause for a designated staff member to perform the final check process, confirming the patient's name and medical record number (MRN).

To improve communication between the ED and CT suite, a cultural shift away from using room numbers to identify patients can be implemented. Instead, the name and MRN can be used during all communications and before transporting patients. A joint Radiology/ED workgroup, established to improve coordination, communication, and safety of transport between departments, should report back on progress made on a regular basis to ensure a feedback loop for any implemented changes. Assigning responsibility to a staff member for coordinating this workflow is essential to success.

To address issues with centralized label printing in the ED, label printers should be on an ED Workstation on Wheels (WOWs) and identification bands should be printed with a 2D barcode at the point of care. Once use of barcodes is implemented, barcode scanning of patient wristbands before CT scans should provide further reductions in identification errors. The findings of one meta-analysis indicated that scanning wristband barcodes resulted in a 57.5% reduction in medical errors.¹⁰

The recommendations suggested herein are likely to reduce distractions and mitigate errors in patient identification, but providers should always remain vigilant, nonetheless. Both the Joint Commission Universal Protocol and the WHO Surgical Safety Checklist recommend double-checking identification as a critical precaution.¹¹ A perfect solution is yet to be found and, especially as technology advances, more active research is needed to find additional innovative solutions.

Take-Home Point

- Patient misidentification is a medical error experienced across all medical departments and avoiding these errors requires far-reaching preventive strategies.
- Mitigating distractions in healthcare settings and implementing pre-test pauses, as operating rooms and interventional suites have already done, can help to prevent medical errors related to patient identification.
- Technological advances, such as point-of-care 2D barcode scanning, use of workstations on wheels (WOWs) at the bedside, and flags in the electronic medical record to identify patients awaiting transport for specific procedures, can be used to minimize interdepartmental miscommunication

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