

Patient Mix-Up

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<https://psnet.ahrq.gov/web-mm/patient-mix>

The Case

Joe Smith [not his real name], a 42-year-old man with nausea and vomiting for 4 days, was on the general medical service at an academic medical center. Overnight, another man with the last name Smith (Raymond Smith [not his real name]) was admitted to the same room. Usually, this coincidence would have been prevented, but the hospital had a bed shortage. Moreover, the admission occurred at 6:30AM, around the time the nursing shift changed, so that the outgoing staff did not notice that this patient was being placed in a room with another Mr. Smith.

Raymond Smith is a 60-year-old man admitted for treatment of alcohol withdrawal. He was scheduled to receive a dose of IV haloperidol at 7AM. The nurse retrieved the pre-filled syringe from the correct Mr. Smith's medication drawer, but confused the two patients when she entered the room. She was about to administer the haloperidol to the wrong Mr. Smith, but the medical student caring for him was pre-rounding and asked the nurse what medication Joe Smith was about to receive. When the student informed the nurse that the team had not ordered any haloperidol for this patient, they checked the medication administration record (MAR) together and recognized the error. The haloperidol was given to the right Mr. Smith, and one Mr. Smith was moved to another room, to reduce the chance of another such error.

The Commentary

It is tempting to attribute this error to the unlikely combination of circumstances that allowed two patients with the same last name to share a hospital room. While few studies have addressed this problem, it is clear from anecdotal reports that this type of error can and does occur even without the coincidence in this case.

Although this error was detected before reaching the patient and causing any harm, the error is clearly serious enough to warrant the term "near miss." It is serious for two reasons. First, the mix-up exposes patients to an arbitrary opportunity for harm — ie, a given patient can potentially receive any medication, and thus might receive one to which they are either allergic or likely to develop an adverse drug reaction based on their current medical condition. For example, a patient with renal failure could receive the

aminoglycoside intended for another patient; the patient with severe asthma could receive the beta-blocker intended for another patient. In this case, for instance, if Mr. Smith 1 were an elderly patient with Parkinson's Disease, his extrapyramidal symptoms might worsen on receiving a dopamine antagonist. Moreover, the error of commission—administering the wrong drug to Joe Smith—would in this case likely be accompanied by an error of omission for Raymond Smith, who would fail to receive an important medication in treatment of his alcohol withdrawal.

Second, the nature of this error is such that little stands between the patient and the error. In one large study of medication errors and adverse drug events, the stages of serious medication errors were as follows: 49% at the ordering stage, 26% at administration, 14% upon dispensing, and 11% from transcribing.⁽¹⁾ (Figure) Errors were much more likely to be intercepted if they occurred at an early stage of the process. In other words, despite the importance of writing legibly, using numerical units (eg, writing 5 mg instead of 5.0 mg), avoiding abbreviations (eg, spelling out “units” instead of “U”) and adhering to other practices that help prevent medication errors, errors committed at the prescribing end of the medication process are likely to be detected (by nurses or pharmacists). However, steps further downstream (eg, during administration) undergo fewer checks, if any, so that errors at such points are far more likely to reach the patient. In fact, in this case, the detection of the error was a fluke, resulting from the chance presence of the medical student in the room at the time of medication administration and the student's fortunate curiosity that prompted a question to the nurse regarding the drug about to be administered.

Documenting errors at the administration stage is difficult because it requires direct observation, which is hard to achieve without the awareness of the personnel being observed.⁽²⁾ In one study that used a variety of record review approaches, “wrong drug or patient” errors represented 4% of all medication errors among hospitalized medical patients.⁽³⁾ Interestingly, the chance that a patient will receive a blood product intended for another patient is roughly 1/20,000. (Fortunately, chance blood group compatibility reduces the frequency of serious transfusion reactions to about 1/600,000.)^(4,5) Given that blood banking generally has greater safeguards against errors of any kind, the frequency with which the wrong patient receives a medication is almost certainly orders of magnitude higher.

The problem of patients with the same or similar last names is common but unstudied. On a recent day at UCSF Medical Center, looking only at the rosters for two of the medical floors, there were two patients with the same last name, Chan, and three other pairs of similar sounding last names (eg, Pena and Pineda). To get a broader picture of the problem, we recently analyzed the hospital's medical service (which accounts for about 15% of all inpatients at UCSF) to see how often there were identical last names over a three-month period. We found that from December 2000 to February 2001, the service had 2 patients with the same last name on 25 (28%) of 89 days. On two of these days, more than one pair of patients with matching last names was on the service.

While most hospitals have some sort of “name alert” protocol, these alerts often appear only in one or two places (eg, the patient roster board on the wall or perhaps flags in the two charts involved), but not necessarily in the medication room, in the pharmacy, on the door to the patients' rooms or other places relevant to alerting providers to the possibility of patient identification errors.

The coincidence of patients with the same last names sharing a room or a ward may initially distract one from appreciating the many ways that “wrong patient” errors can occur, even without this apparent fluke. It is also important to remember that these 'flukes' do happen, and the thousands of medication administrations and procedures that occur every day in American hospitals provide ample opportunities for two or three coincidences to intersect and produce an egregious error.(6)

The [Table](#) lists some of the major opportunities for a “wrong patient” medication error. Unfortunately, there are no easy solutions to implement in response to these opportunities for error. Barcoding is one promising fail-safe strategy. In barcoding systems, nurses scan the patient's barcoded wrist identification band and scan the intended medication prior to administration. If the codes do not match, the nurse is alerted to the possibility of an error. While such systems should bring major reductions in administration errors, many errors in the emergency department, ICU, or other settings in which orders are acted upon rapidly may not be prevented. In these time-pressured environments, barcoding systems may produce frequent 'beeps,' so that nurses become accustomed to over-riding the system and proceeding with the administration of necessary emergent medications. In such settings, the alarms lose their impact, and providers develop work patterns that involve “routine rule violations.”

Take-Home Points

Regardless of the presence or absence of technology such as computerized physician order entry or barcoding of medications, physicians can do several things to help prevent “wrong patient” medication errors:

- Always check the name at the top of the record before writing an order.
- Whenever possible, verbally inform the patient's nurse of new written orders.
- Periodically check the medication administration record (MAR) of your patients to make sure they are receiving the medications they should be receiving and not receiving ones they shouldn't.
- Do not allow patients with similar or the same names to be placed in the same room (ideally, they would be on different floors or in different sections of the same floor).
- Place visible alerts (“NAME ALERT!”) not just on the ward census sheets, but also on addressograph cards, charts of patients with the same or similar names, patient rooms, and even tote boards and individualized patient lists commonly used by students, interns, and residents.

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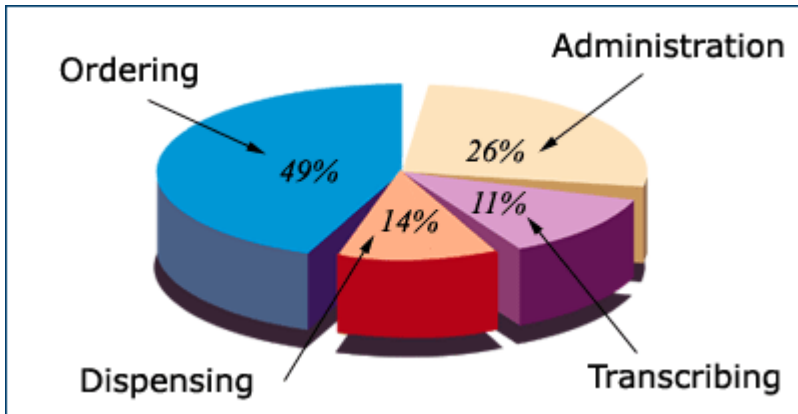
Table

How Wrong Patient Medication Errors Occur

Stage at Which Error Is Introduced	Example Error
Ordering	Order written in the wrong chart (or entered into the wrong computerized record)
Transcription	Order written in correct chart, but order sheets have the wrong name stamp
Transcription	Order correctly written, but transcribed to wrong Medication Administration Record (MAR) for any of a variety of reasons
Dispensing	Pharmacist distracted during order entry by phone call about another patient; resumes order entry with the wrong computer record open, so that medication becomes part of the pharmacy order record for the wrong patient
Administration	Nurse helping out a colleague: "Mr. Smith needs his Haldol; can you give it to him, while I take care of Ms. Jones?"

Figure

Distribution of Adverse Drug Events According to the Stage of the Error in the Medication Process (1)



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