Wrong-Patient Medication Errors: An Analysis of Event Reports in Pennsylvania and Strategies for Prevention

INTRODUCTION

Patient misidentification has been a long-standing problem that has permeated all aspects of healthcare and led to errors ranging from wrong-site surgeries to discharging infants to the wrong families to ordering incompatible blood. From 2006 to 2007, the United Kingdom National Patient Safety Agency (NPSA) received 24,382 reports of patients being mismatched to their care.1 The Joint Commission, which has been tracking these errors since 1996, reviewed 152 sentinel events related to wrong-patient, wrong-site, and wrong-procedure events in 2011 alone.2 Because of the prevalence of patient misidentification, some organizations have offered various risk reduction strategies. The Joint Commission targets improving the accuracy of patient identification as a National Patient Safety Goal (NPSG).3 Internationally, NPSA has recommended the use and the standardization of patient identity wristbands in the United Kingdom.1 The World Health Organization (WHO) has also proposed strategies to prevent patient misidentification.4 Despite these and other efforts, few studies have been performed that have analyzed wrong-patient medication errors in particular. More importantly, there have been few recommendations on the specific safeguards that should be implemented throughout the medication-use process to prevent such errors.

Wrong-patient medication errors can be thought of as both an unordered-drug error for the patient who received the dose and an omission error for the patient for whom the dose was intended.5 Although wrong-patient errors are often erroneously considered as administration of one patient’s medications to another by a nurse, reports submitted to the Institute for Safe Medication Practices (ISMP) have shown that wrongpatient errors can originate from any phase in the medication-use process.6 This analysis serves to uniquely review a large set of medication error events reported by Pennsylvania healthcare facilities to the Pennsylvania Patient Safety Authority in order to understand the various ways wrong-patient medication errors occur in each node of the medication-use process, identify trends and contributing factors, and provide risk reduction strategies to prevent these events from occurring.

METHODOLOGY

Due to the volume of reports submitted in a calendar year, medication error event reports from July 1, 2011, through December 31, 2011, that were categorized as “wrong patient” were queried from the Authority’s Pennsylvania Patient Safety Reporting System (PA-PSRS) database. All fields of the event reports, including harm score and care area, were self-reported, but the medication name fields were adjusted during analysis if information on the medication involved in the error had been available in the event description. Medication name fields that were left blank or did not contain names of approved medications and were not able to be adjusted based on information in the event descriptions were categorized as “unknown.” The medications were then categorized as being highalert or not per ISMP’s List of High-Alert Medications.7 The event description fields were analyzed in detail in order to classify each event by node, related processes, and possible causes and contributing factors. Various trends were quantified using descriptive statistics.

AGGREGATE ANALYSIS

During the aforementioned reporting period, the Authority received 826 distinct medication error event reports from Pennsylvania healthcare facilities that were categorized as wrong-patient events. However, based on the event descriptions, 13 reports (1.6% of total reports) did not actually involve wrong-patient errors and were excluded from
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the analysis. The remaining 813 reports represent errors that occurred across the continuum of the medication-use process (from prescribing to administration and monitoring of medications), involved a wide range of medications, and occurred on various patient care units and departments.

The errors reported occurred during all nodes of the medication-use process (see Figure). The reported errors occurred most often during transcribing (38.3%, n = 311) and administration (43.4%, n = 353) and least during dispensing (5.2%, n = 42).

While there were many different medications involved, the most prevalent medications were similar to those reported in previous analyses of events reported to the Authority.9 Insulin (4.3%, n = 35), heparin (2.6%, n = 21), and vancomycin (2.5%, n = 20) were the three most common medications involved in wrong-patient errors. Opioids were mentioned in 7.5% (n = 61) of event reports, and anticoagulants, such as warfarin and alteplase, were reported in 6.0% (n = 49) of event reports. Almost 13% (n = 104) of reports listed anti-infective medications as being involved in the event. A similar number of reports (12.7%, n = 103) involved more than one medication, and many reports did not specify which medication was involved in the wrong-patient error (16.6%, n = 135). Of the reports involving a known single medication, almost 30% (n = 169) were associated with high-alert medications. This finding is similar to one from a previous analysis in which one-fourth of reports submitted to PA-PSRS involved high-alert medications.10

Among the wrong-patient event reports submitted, most (26.3%, n = 214) were associated with medical-surgical units, and 22.1% (n = 180) were associated with the pharmacy. The third most common care area noted in the reports was the emergency department (9.8%, n = 80).

Twenty-five reports (3.1%) involved pediatric patients. It is unclear, however, whether the locations noted in the event reports represent where the errors originated or where the errors were discovered.

Despite the variety of medication errors involving the wrong patient, few resulted in patient harm. Reporters self-categorized the events by harm score, which is adapted from the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) Index for Categorizing Medication Errors.11 Only three reports (0.4%) were categorized with harm score E, and one report (0.1%) was categorized with harm score F. A majority of the reports (84.1%, n = 684) were categorized as harm score C or less.

FOCUSED EVENT ANALYSIS

Wrong-Patient Errors during Administration

There were 353 wrong-patient errors that occurred during the administration node, which includes the range of tasks typically performed by nurses. When looking at the processes of administration, a majority of events occurred during actual medication administration (81.0%, n = 286), 15.6% (n = 55) occurred during medication procurement, and 3.4% (n = 12) occurred during monitoring. Medication procurement consists of a nurse obtaining the wrong medication from various medication storage areas (see Table 1). For example, multiple reports described a nurse selecting the wrong patient from the automated dispensing cabinet (ADC) screen when retrieving medications. Monitoring is defined as patient assessment activities that occur before or after administration of medications. The most prevalent monitoring error was related to laboratory test values (83.3%; n = 10), such as blood glucose results.

Many factors, and often more than one factor per event, contributed to patients receiving other patients’ medications during actual medication administration. Most commonly, two patients were prescribed the same medication, and one received the medication dose intended for the other (14.3%, n = 41). The second most prevalent contributing factor was inadequate identification (ID) check (12.9%, n = 37), in which the event descriptions specifically mention failure.
Examples of wrong-patient errors during administration include the following:

A patient told the nurse that she was another patient during the morning medication administration. The nurse did not check the patient’s [ID] bracelet, and the patient received another patient’s morning medications.

The patient was in the hall, and the nurse called the name of a patient. The patient came down the hall, and the nurse asked the patient if this was her name. The patient responded “Yes.” The nurse looked at a picture and then asked the patient where her wristband was since it was not on the patient. The patient responded, “I took it off a couple days ago.” The nurse looked at the patient’s picture and asked again, “Are you this patient?” The patient responded “Yes” and took the medications without questioning them. Later, the nurse realized that the two patients looked very much alike.

The nurse attempted to administer [a medication]. The nurse asked three adults in the room to verify the patient, since the patient was a pediatric patient and no ID bracelet was on. All three verified and allowed the nurse to give the medication to the patient when it was the wrong patient.

The wrong patient profile was viewed on the screen. The nurse pulled Vicon® for pain for a patient in 123A but was on the patient in 123B medication profile. The nurse entered the room and scanned the medication while still on the 123B profile. The scan matched and at this point, the nurse did not notice that he was on the wrong profile. The nurse approached 123A, scanned [the patient’s] bracelet, and administered the medication without checking the screen to see if the correct patient was scanned.

### Wrong-Patient Errors during Transcribing

The second most prevalent node in which errors originated was transcribing. Transcribing was defined as the process that involves the transferring of a paper medication order to a patient’s electronic or paper MAR. Nurses, pharmacists, unit clerks, and others can perform this task; however, few of the reports identify the personnel involved. Of the transcribing events, most errors were due to transferring orders into the wrong chart (81.4%, n = 253). Other errors occurred because the wrong patient’s label was affixed to the order (18.3%, n = 57), and one error (0.3%) involved both a wrong label and the wrong chart.

Regarding contributing factors, multiple reports mentioned verbal orders (7.4%, n = 23), similar patient names (2.6%, n = 8), and/or the same or similar room numbers (1.6%, n = 5).

Nurse took a verbal order for one patient but placed it on the wrong patient’s chart. The order was faxed to pharmacy but caught when in verification stage.

Personnel catching and correcting the error was mentioned in 50.8% (n = 158) of the event reports involving transcribing. Of these, 81.6% (n = 129) of the errors were caught by a pharmacist, and 15.8% (n = 25) were caught by a nurse.

### Wrong-Patient Errors during Prescribing

The predominant type of prescribing error involved a prescriber ordering a medication on the wrong chart (92.9%, n = 91). Various contributing factors were identified, but none were associated with more than 4.1% (n = 4) of reports. In one report, a physician gave a verbal order for a medication but did not use the patient’s full name. In another example, a physician mistakenly ordered medications for the patient’s wife, who was located in the same room.

Examples of wrong-patient errors during prescribing include the following:

The nurse found a medication delivered to the floor for a patient on an amiodarone infusion. There was no order found in the patient’s chart for this medication. The pharmacist was notified, who reported that the cardiologist called asking for a “stat” amiodarone for a patient but only...
Wrong-Patient Errors during Dispensing

The least number of wrong-patient errors occurred during the dispensing node (5.2%; n = 42), the stage of the medication-use process that primarily takes place within the pharmacy. These errors were associated with either the processes of filling (57.1%, n = 24) or of delivery (42.9%, n = 18). A filling error is made when a medication prescribed for one patient is dispensed from the pharmacy for a different patient. Most of the filling errors (70.8%, n = 17) manifested as an incorrect patient-specific label being applied to a medication or medication package.

Levaquin® was ordered for a patient in room 456, and the medication was still unavailable. There was a Levaquin 750 mg sent for a patient in room 465, but he was not ordered it. When I called the pharmacy to inquire about it, the pharmacy said they had no recall of them sending the Levaquin for 465, but they said they did recall that it was sent for 456. The pharmacist was made aware that we had a bag with two Levaquin 750 in it but mislabeled with a 465 label on it.

A delivery error is made when a medication that is filled correctly is delivered for the incorrect patient, and this most often resulted in medication placed in the incorrect patient bin.

Patient was ordered Fioricet® every six hours as needed for headache. A pharmacist who was on the unit was approached by nursing about the delivery of the Fioricet, as it was not in the patient’s drawer. The nurse happened to look in the medication drawer of another patient and discovered the Fioricet.

Contributing Factors Associated with Wrong-Patient Errors

Besides those mentioned above, several contributing factors that span the medication-use process were identified. Although the proportions were low, these characteristics were present in events that may have been prevented with system changes (see Table 2).

Table 2. Contributing Factors and Characteristics of Wrong-Patient Errors, as Reported to the Pennsylvania Patient Safety Authority, July 2011 to December 2011

<table>
<thead>
<tr>
<th>CONTRIBUTING FACTOR OR CHARACTERISTIC</th>
<th>NO. OF REPORTS (N = 813)</th>
<th>% OF TOTAL REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same medication</td>
<td>52</td>
<td>6.4</td>
</tr>
<tr>
<td>Verbal order</td>
<td>26</td>
<td>3.2</td>
</tr>
<tr>
<td>Similar patient name</td>
<td>25</td>
<td>3.1</td>
</tr>
<tr>
<td>Confusion with discharged patient</td>
<td>11</td>
<td>1.4</td>
</tr>
<tr>
<td>Caught by patient or family</td>
<td>10</td>
<td>1.2</td>
</tr>
<tr>
<td>Interruption</td>
<td>9</td>
<td>1.1</td>
</tr>
</tbody>
</table>

In roughly 6% (n = 52) of the events, reporters mentioned that one patient was confused with another because both patients were to receive the same medication. While most of the errors occurred during administration, four errors (7.7%) originated during prescribing. In one example, a physician prescribed warfarin for two patients but switched the doses. In another example, a nurse confused intravenous (IV) medication bags for two of his patients who were on the same medication. In the latter example, the medications for both patients were stored in the same area, and the report did not mention the use of mechanisms to confirm the correct medication (e.g., bar coding).

I had two patients who were due for vancomycin IV at 1800 last evening. Since I was all the way in the back hall, I removed both vancomycin [bags] from the fridge at the nursing station. When I hung the medication, I switched the bags by accident.

About 3.2% (n = 26) of errors involved verbal orders, with only one report describing the use during an urgent situation. ISMP has recommended that verbal orders be limited to use during emergencies and similar situations. The following example typifies a verbal order that was transcribed onto the wrong patient’s chart. Fortunately, a nurse had investigated and discovered the incorrect order. However, incorrect verbal orders are often difficult to catch because they...
necessitate the prescriber or the person who is receiving the order to realize the incorrect transcriptions.

A verbal order was written for Disulfiram\textsuperscript{\textregistered} 100 mg once daily and A&D ointment as needed on the patient’s chart. Later, another patient was complaining of itching, and the nurse received a report that an order was obtained. Upon investigation, no order was found on the other patient’s chart. The charge nurse, while doing chart checks, found the order on the wrong patient’s chart. The nurse who took the verbal order verified that it indeed was on the wrong patient.

While patients with similar names can lead to error-prone situations, only 3.1\% (n = 25) of reports mentioned this contributing factor. The low prevalence may be because many hospitals may already have mechanisms in place to prevent confusion between patients with similar names. In fact, the assumption that similar names are the cause of most wrong-patient errors may result in other failure points being ignored. The example below mentions that two patients had the same first letter of their last names, but this was likely not the only reason for the incorrect transcription.

An order for Imodium\textsuperscript{\textregistered} 2 mg as needed was entered for the wrong patient on the same floor. Both patients involved shared the same first letter of their last name. The order was sent to the pharmacy two more times after the original was entered on the wrong patient. A different pharmacist entered the resubmitted order on the correct patient.

Eleven reports (1.4\%) described situations in which a patient was confused with a discharged patient. In one example, the confusion involved a discharged patient who had previously occupied the same bed. Two other examples described insulin pens of discharged patients being dispensed or used on current patients. Even documents from discharged patients were mistaken for those of current patients.

During the morning assessment, it was noticed that the previously infused antibiotic syringe on the IV pole with another patient’s name on the medication label was connected to a current patient. Correct medication and dose on the label. The name and date of birth were on the label for a discharged patient, from the previous day, who had occupied the same room and bed.

The patient in this room was ordered a heparin drip based on an ECG [electrocardiogram] strip on the chart that showed a rhythm of atrial fibrillation. The ECG strip that was on the chart did not belong to this patient but was from the patient who had been in the room yesterday but had been discharged. The date on the ECG strip was from yesterday afternoon. The heparin drip was ordered this morning by the cardiology resident, and the error was found this afternoon during cardiology rounds by the cardiologist. The patient never received any heparin, and the order was discontinued as soon as it was discovered by the cardiologist.

Finally, some reports described events in which patients or their family members caught wrong-patient errors. Below is an example that illustrates one such case.

I was called to the patient’s room by the wife who noted, within 10 minutes of initiation of infusion, that the IV pump read vancomycin but the medication bag was labeled as acyclovir and with a different patient’s name. Dose immediately discontinued and no reaction noted.

**RISK REDUCTION STRATEGIES**

The reports of wrong-patient events submitted to the Authority reveal the complex nature of wrong-patient medication errors (see Table 3). While often thought to occur only during administration, these types of errors were identified in all phases of the medication-use process. Unfortunately, most of the reports did not explicitly describe the errors nor disclose the causes and contributing factors linked to the errors; however, these reports, observations from ISMP, and recommendations in the literature do suggest strategies that healthcare facilities may consider to decrease the risk of wrong-patient medication errors.

**Improve Patient Verification for All Patient Encounters**

While the Joint Commission has an NPSG of improving the accuracy of patient identification, the proper use of two patient identifiers may still not be performed at all times.\textsuperscript{11,14} Such verification should be considered for all patient-associated tasks, including prescribing, reporting of test results, and communication of medication information between providers. A proper identification check not only consists of confirmation with the patient but also requires confirmation with the MAR or patient chart, patient armband, patient-specific medication labels, and/or other records.

Healthcare facilities may consider standardizing the two reliable patient identifiers that should be used for identification and verification. Several reports illustrate examples whereby patients with similar room numbers or the same drug were prescribed, dispensed, or administered a dose intended for another patient. Overreliance on patient location and the name of the medication ordered may have contributed to one event reported to the Authority about a pharmacy technician dispensing an insulin pen with the label of a previous patient located in the same bed attached to it. In fact, the Joint Commission’s NPSG requires healthcare practitioners to use at least two patient identifiers (not the patient’s room number or location) when providing care,
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Ensure Proper Storage of Medications and Patient-Specific Documents

Because medications are often dispensed in patient-specific doses or unit-of-use formulations, store these doses in a manner that does not cause confusion during retrieval for administration. For patient-specific doses, hospitals often use individual storage bins for each patient. If used, clearly label these bins and design them to facilitate medication delivery and retrieval. Moreover, some of the reports describe patients receiving the wrong medication because doses intended for other patients were placed in the former patients’ rooms.

Similarly, store and return patient-specific documents in the patient's chart. For example, a misplaced monitoring sheet may result in an unnecessary treatment for another patient. Standardizing the labeling practices for paper documents, monitoring sheets, and lab results can decrease the risk of wrong-patient errors.

Lastly, institute procedures to remove medications and documents from active patient care areas when patients are discharged. In a few events reported to the Authority, medications prescribed for discharged patients remained and were administered to new patients.

Use Healthcare Technology Fully and Properly

Although not always easy to implement, technological innovations can enhance patient safety. The paper transcription errors discussed earlier may have been avoided with computerized prescriber order entry (CPOE) systems that integrate with pharmacy computer systems. Many of these systems include various safety

Table 3. Descriptions of How Wrong-Patient Medication Errors Occur, by Node, as Reported to the Pennsylvania Patient Safety Authority, July 2011 to December 2011

<table>
<thead>
<tr>
<th>NODE</th>
<th>REPORTED EVENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribing</td>
<td>Medication prescribed for a wrong patient with a similar room number</td>
</tr>
<tr>
<td></td>
<td>Wrong chart selected during prescribing</td>
</tr>
<tr>
<td></td>
<td>Patient given the wrong prescription</td>
</tr>
<tr>
<td></td>
<td>Patient prescribed the dose for another patient on the same medication</td>
</tr>
<tr>
<td></td>
<td>Patient prescribed medication based on data of another patient</td>
</tr>
<tr>
<td></td>
<td>Medication prescribed for a wrong patient with a similar name</td>
</tr>
<tr>
<td></td>
<td>Medication prescribed for a patient’s relative instead of the patient</td>
</tr>
<tr>
<td></td>
<td>Wrong chart selected in the computerized prescriber order entry system from multiple open charts</td>
</tr>
<tr>
<td>Transcribing</td>
<td>Order transcribed into the wrong chart</td>
</tr>
<tr>
<td></td>
<td>Wrong label affixed to the order sheet</td>
</tr>
<tr>
<td></td>
<td>Wrong patient chart selected during transcription due to similar name</td>
</tr>
<tr>
<td></td>
<td>Verbal order transcribed for the wrong patient</td>
</tr>
<tr>
<td></td>
<td>Orders transcribed for the wrong patient with a similar name</td>
</tr>
<tr>
<td>Dispensing</td>
<td>Wrong patient’s label affixed to the medication</td>
</tr>
<tr>
<td></td>
<td>Medication placed in the wrong patient’s bin</td>
</tr>
<tr>
<td></td>
<td>Medication dispensed for the wrong patient with a similar name</td>
</tr>
<tr>
<td></td>
<td>Dose intended for another patient dispensed when both prescribed the same medication</td>
</tr>
<tr>
<td>Administration</td>
<td>Patient given a dose intended for another when both prescribed the same medication</td>
</tr>
<tr>
<td></td>
<td>Improper check of patient identification before administration</td>
</tr>
<tr>
<td></td>
<td>Roommate given medication</td>
</tr>
<tr>
<td></td>
<td>Medication administered to a patient in a room with a similar room number</td>
</tr>
<tr>
<td></td>
<td>Improper bar-code scanning procedures before administration</td>
</tr>
<tr>
<td></td>
<td>Practitioner used the wrong patient’s medication administration record</td>
</tr>
<tr>
<td></td>
<td>Patient administered a dose intended for a patient with a similar name</td>
</tr>
<tr>
<td></td>
<td>Medication in an unlabeled syringe given to the wrong patient</td>
</tr>
<tr>
<td></td>
<td>Medication administered was another patient’s medication that was accidentally left in the room</td>
</tr>
<tr>
<td></td>
<td>Patient verified the wrong name before administration</td>
</tr>
<tr>
<td></td>
<td>Patient administered a medication intended for an already-discharged patient</td>
</tr>
<tr>
<td></td>
<td>Medication administered based on wrong patient’s laboratory data</td>
</tr>
<tr>
<td></td>
<td>Medication retrieved from automated dispensing cabinet under the wrong patient’s profile</td>
</tr>
<tr>
<td></td>
<td>Wrong medication retrieved from the refrigerator, pharmacy, or medication cart</td>
</tr>
</tbody>
</table>

Note: Error descriptions are based on a review of events reported to the Authority, observations from the Institute for Safe Medication Practices, and errors published in the literature.
features, such as alerts, that can help detect inappropriate medication orders.

Although historical studies have shown error reduction up to 81%, CPOE systems can also lead to error risk.16 Therefore, these systems need to be continually examined and enhanced. In one study, extra safety features were added to the existing CPOE system to help physicians verify patient identity before signing the orders electronically.17 In another study done at a pediatric hospital, the patient’s photograph was used to prompt the physician to confirm the correct patient prior to completing his order.18 Furthermore, many hospitals limit the number of electronic charts that practitioners can have open at any one time so that there is decreased risk that the wrong chart is chosen. Finally, Adelman et al. found that 10.6% of the wrong-patient prescribing errors were juxtaposition errors in which the wrong patient is selected from a list of names by mis-clicking.18

In addition to CPOE, bar coding can be used to detect and prevent errors during dispensing and administration. For example, during the filling process, pharmacists and/or technicians can employ bar-code verification of the medication with the computer-generated patient label. Bar coding during medication administration can be a reliable double check if performed correctly. Some of the reports analyzed in this study stated that bar coding successfully detected the wrong-patient error; however, a number of reports indicated that improper use of scanning prevented the error from being caught. In these instances, nurses administered the medication first then scanned the patient’s armband second, or nurses failed to check for a confirmation from the scanning prior to administration. ISMP has received many reports similar to the latter example and has described this problem in its newsletters.19

Hospitals often use ADCs as secure storage units for medications without fully using system capabilities to prevent errors. An ADC that allows nurses to override a majority of medications essentially eliminates a pharmacist’s double check of the prescriber’s order. The use of profiled ADCs (such that the prescribed and verified medications are the only medications that can be removed from the ADC) is one way to take advantage of built-in safety checks.

As technology evolves, organizations are encouraged to continue to understand the patient safety features of new systems and devices, as well as to identify the weaknesses and limitations of technology and prevent them from being exploited.

Limit the Use of Verbal Orders

Although essential in emergency situations, verbal orders in nonurgent conditions can result in errors early in the medication-use process that may not easily be caught downstream. Standardize policies that detail when verbal orders are appropriate, who may receive verbal orders, how to give and receive these orders, and the safety checks that should be used to prevent error. In an earlier example, the prescriber failed to provide appropriate identification and the pharmacist failed to confirm the patient’s identity by reading back patient identifiers in the chart. Certain computer systems allow orders to be designated as verbal orders and, thus, require prescribers to cosign or review these orders.

Empower the Patient to Prevent and Detect Medication Errors

Engaging the patient and family members can be an added safeguard against harm from an error.20 In several of the reports, patients or family members caught the wrong-patient error when they actively examined the medications being administered and questioned the reasons for the medications. They noticed IV bags with labels that had another patient’s name, and in one event described earlier, a family member even noticed the medication mismatch on the IV bag and the IV pump.

Establish patient education programs to teach patients the importance of accurate patient identification during all points of contact and how staff should be verifying their identities. For example, if the facility uses bar-code identification, encourage the patient to speak up if his armband is not scanned prior to medication administration. In fact, WHO also “encourage[s] patients and their families or surrogates to be active participants in identification, to express concerns about safety and potential errors, and to ask questions about the correctness of their care.”

Educate patients to ask questions about their medications and the purpose of their medications (e.g., see the Authority’s Consumer Tips about medication safety). To accomplish this, some organizations have implemented programs in which patients and family members become active partners in ensuring patient safety. These programs include brief safety orientations for the patient upon admission, dedicated hotlines, and educational material listing questions that the patient should be asking the healthcare practitioners who care for them.

CONCLUSION

Wrong-patient medication errors can occur at any phase of the medication-use process. While events reported to the Authority suggest that these errors occurred most often during administration and transcription, implementing safety strategies at all nodes can help to ensure that the correct patient receives the correct medication.

Acknowledgments

Michael J. Gaunt, Pharm.D., Pennsylvania Patient Safety Authority, contributed to manuscript preparation.
LEARNING OBJECTIVES

- Identify the nodes involved in wrong-patient medication errors reported to the Pennsylvania Patient Safety Authority.
- Identify the processes under each node that were involved in the wrong-patient medication errors reported to the Authority.
- Recognize the causes and contributing factors associated with wrong-patient errors.
- Select appropriate risk reduction strategies to prevent wrong-patient medication errors.

SELF-ASSESSMENT QUESTIONS

The following questions about this article may be useful for internal education and assessment. You may use the following examples or come up with your own questions.

1. Which of the following is the most prevalent node associated with wrong-patient errors reported to the Authority?
   a. Prescribing
   b. Transcribing
   c. Dispensing
   d. Administration

NOTES

SELF-ASSESSMENT QUESTIONS (CONTINUED)

Questions 2 through 4 refer to the following case.

Two patients, Patient A and Patient B, both suspected of having hospital-acquired pneumonia, were located in the same room. The physician taking care of Patient A asked the nurse to order vancomycin for that patient. The nurse had the electronic charts for both Patient A and Patient B open and accidentally entered the medication on Patient B’s chart. The pharmacist verifying the order received a duplicate-medication alert from the computer system and realized that Patient B had already been started on vancomycin two days earlier. She called the nurse to clarify, and the nurse then realized that he had entered the medication on the wrong patient.

2. During which node of the medication-use process did the error occur?
   a. Prescribing
   b. Transcribing
   c. Dispensing
   d. Administration

3. What risk reduction strategy was in place that helped to identify the wrong-patient error?
   a. The proper use of bar-code scanning technology by the nurse
   b. The pharmacist’s use of two patient identifiers during order verification
   c. The pharmacy computer system’s alert that detected the inappropriate medication order
   d. The storage of each patient’s vancomycin dose in separate bins

4. Which of the following strategies is most effective in preventing such errors?
   a. Limiting the use of verbal orders during nonurgent situations
   b. Implementing a procedure that requires a two-nurse verification to receive a verbal order
   c. Separating patients who have similar diagnoses into different rooms
   d. Allowing nurses to only have one patient’s electronic chart open at a time

Questions 5 and 6 refer to the following case.

A nurse notified the physician that the patient in 216A was ready for her lumbar puncture and intrathecal methotrexate. The physician thought he heard 216B, went to the patient in 216B, and started explaining the procedure to him. The nurse walked in to prepare the patient for the procedure and noticed that the physician was talking to the wrong patient. The right patient received the procedure.

5. Which of the following factors most directly contributed to this event?
   a. Reliance on the room number to identify the patient
   b. Lack of standardized safeguards for chemotherapy agents
   c. Improper use of bar-code scanning of the medication and patient
   d. Lack of clinical decision support software in the computerized prescriber order entry (CPOE) system

6. Which of the following additional strategies is most beneficial to help prevent such errors?
   a. Limiting the use of verbal orders during nonurgent situations
   b. Placing patients receiving high-alert medications in private rooms
   c. Storing the medication in the automated dispensing cabinet (ADC) until needed
   d. Using two reliable patient identifiers for all patient-associated tasks
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THE PENNSYLVANIA PATIENT SAFETY AUTHORITY AND ITS CONTRACTORS

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