Patients Taking Their Own Medications While in the Hospital

INTRODUCTION

The medications prescribed for and administered to patients while they are hospitalized are typically provided by the hospital’s pharmacy department. However, there are times when it may be necessary for a patient to bring his or her own medications into the hospital. For example, patients are often asked to bring their medications with them so that an accurate medication list can be generated for medication reconciliation. If the drug the patient needs is not on the hospital’s formulary and the hospital has no alternative therapy, the patients’ personal medications may be used to avoid an interruption in therapy.1 Some patients also may bring their medications from home to the hospital in hopes of saving money. Many patients desire to self-medicate with their own medicines while in the hospital to ease anxiety over the loss of self-control of their care.2

Hospitals of all sizes face challenges in managing patients’ personal medications. Larger institutions and government hospitals generally maintain larger inventories of medications and have closed formularies. Smaller community and rural hospitals may not have the space or funds to maintain a large inventory of medications and, therefore, may be more likely to allow patients to use their own medications. A survey of directors of pharmacy at small hospitals (300 beds or less) found that a majority (90.9%) of the hospitals allowed patients to use their own medications while in the hospital. Of the hospitals not allowing the use of personal medications, 42.9% sent the medications home with the patient’s family member or friend, 28.6% stored them on the nursing unit until the patient was discharged, and another 14.3% stored them in the pharmacy until the patient was discharged.1

The Joint Commission addresses the issues involving patients’ medications in standard MM.03.01.05, which states, “The hospital safely controls medications brought into the hospital by patients, their families, or licensed independent practitioners.” This standard includes the following elements of performance:3

— The hospital defines when medications brought into the hospital by patients, their families, or licensed independent practitioners can be administered.
— Before use or administration of a medication brought into the hospital by a patient, his or her family, or a licensed independent practitioner, the hospital identifies the medication and visually evaluates the medication’s integrity.
— The hospital informs the prescriber and patient if the medication brought into the hospital by patients, their families, or licensed independent practitioners is not permitted.

Pennsylvania facilities have submitted a number of reports to the Pennsylvania Patient Safety Authority mentioning errors with the use of patients’ own medications, many indicating staff have found medications in a patient’s room that were brought from home without the hospital staff’s knowledge. There is scarce literature that addresses situations in which patients bring in their own medications, and a comprehensive search found no literature that discussed patients taking their own medications without knowledge to the healthcare staff. Analysis of events reported to the Authority in which patients used their own medications has determined the most common types of events, patient populations involved, medications involved, and reasons why patients bring their medications to the hospital, as reported in Pennsylvania.
AGGREGATE ANALYSIS OF PATIENTS BRINGING THEIR OWN MEDICATIONS INTO THE HOSPITAL

While reviewing reports submitted to the Authority, analysts have the opportunity to further classify reports, using a "monitor code," for future querying opportunities. Analysts queried the Authority’s database for reports assigned the monitor code “PE1,” representing reports identified as errors involving patients using their own medications. In addition, the event descriptions were queried for phrases such as “own meds” to identify reports that may involve patients taking their own medications that were not assigned the “PE1” monitor code. The query yielded 879 medication error reports that had been submitted to the Authority from July 1, 2004, through January 31, 2011. Categorization of the reports by harm score, which is adapted from the National Coordinating Council for Medication Error Reporting and Prevention harm index,4 shows that 77.7% for Medication Error Reporting and Prevention reports by harm score, which is adapted for phrases such as “own meds” to identify reports that may involve patients taking their own medications that were not assigned the “PE1” monitor code. The query yielded 879 medication error reports that had been submitted to the Authority from July 1, 2004, through January 31, 2011. Categorization of the reports by harm score, which is adapted from the National Coordinating Council for Medication Error Reporting and Prevention harm index,4 shows that 77.7% (n = 683) of the events reached the patient (harm index = C to I) and 2% (n = 18) of the events resulted in patient harm (harm index = E to I).

More than 60.8% of the reports (n = 534) involved the adult population, while 36.6% (n = 322) involved the elderly. Only 2.6% (n = 23) of reports involved the pediatric population.

The predominant medication error event types reported by facilities (see Table 1) included unauthorized drug (48%, n = 422), other (23.1%, n = 203), extra dose (8%, n = 70), wrong dose/overdosage (2.3%, n = 20), and wrong drug (1.7%, n = 15).

Table 1. Predominant Medication Error Event Types Associated with Patients Taking Their Own Medications (n = 746, 84.9% of total reports), July 1, 2004, to January 31, 2011

<table>
<thead>
<tr>
<th>EVENT TYPE</th>
<th>NUMBER OF REPORTS</th>
<th>PERCENTAGE OF TOTAL REPORTS (N = 879)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unauthorized drug</td>
<td>422</td>
<td>48.0%</td>
</tr>
<tr>
<td>Extra dose</td>
<td>70</td>
<td>8.0</td>
</tr>
<tr>
<td>Wrong dose/overdosage</td>
<td>20</td>
<td>2.3</td>
</tr>
<tr>
<td>Monitoring error/other</td>
<td>16</td>
<td>1.8</td>
</tr>
<tr>
<td>Wrong drug</td>
<td>15</td>
<td>1.7</td>
</tr>
<tr>
<td>Other</td>
<td>203</td>
<td>23.1</td>
</tr>
</tbody>
</table>

Medications Brought in by Patients

Nearly 300 different medications were listed in the 879 reports submitted to the Authority, and in 164 reports (18.7%), patients took multiple medications, for a total of nearly 1,300 medications mentioned in all reports. This does not include reports where no medications were mentioned (n = 114, 13%).

Patient found unresponsive. Emergently intubated and appropriate intervention for symptoms provided. During treatment, two prescription bottles, both empty, were found in patient’s bed. Both bottles had refill dates that occurred during inpatient hospitalization. Family will be questioned in regard to who provided the medications to the patient.

One or more controlled substances were involved in 40.3% (n = 354) of events reported to the Authority, and 15 of the top 25 mentioned drugs involved controlled substances. (A controlled [scheduled] drug is one for which use and distribution is tightly controlled because of its abuse potential or risk.5) The problem with controlled substance abuse, including opioids (e.g., Percocet®, Vicodin®) and benzodiazepines (e.g., Valium®, Ativan®) in the United States is well documented. In 2010, two million people reported using prescription painkillers for nonmedical purposes for the first time within the last year—this equates to nearly 5,500 people per day.6 The unprecedented rise in overdose deaths in the United States parallels a 300% increase since 1999 in the sale of opioid painkillers. These drugs were involved in 14,800 overdose deaths in 2008, more than cocaine and heroin combined.7 The misuse and abuse of prescription painkillers was responsible for more than 475,000 emergency department visits in 2009, a number that nearly doubled in just five years.8 Authority analysts found, through review of event descriptions reported to the Authority and in response to the patients taking their own medications, that nearly 8% (n = 70) of the reported events resulted in a transfer of the patient to a higher level of care, with 67% (n = 47) of these cases involving patients taking their own controlled substances.

Patient did not disclose presence of home medications, including Soma® and Valium, upon admission when asked by admitting nurse. Patient took the Soma and Valium by crushing the medications and self-administering via her gastrointestinal tube. The medications were discovered in the patient’s personal belongings along with a syringe and pill crusher. The patient was found to be lethargic, with minimal response to verbal stimuli. Patient was transferred to the intensive care unit for monitoring.
A patient confused and with slurred speech was found standing in urine on the floor. Two pills, Benadryl® and Ambien®, were found on the floor. In addition, empty bottles for [containing] Zanaflex®, Vicodin, and Darvocet® were found in the patient’s drawer. The pills were brought in by the patient’s wife, but the patient denies taking the medications.

Patients also brought in over-the-counter medications, as mentioned in 108 reports (12.3%), including Tylenol®, Zantac®, aspirin, Pepcid®, and diphenhydramine.

A patient with a fever refused the hospital-supplied Tylenol. The patient’s parent brought in the patient’s home supply, and the nurse said the child could take that because the fever needed to be treated. The nurse went out to get an oral syringe, and when he came back to the room, the mother said she gave the child what “seemed like a lot of Tylenol.” The nurse asked how much, and the parent said 20 mL, which would be 640 mg. The doctor was notified and labs were obtained, which showed an acetaminophen level of 30 and liver functions tests [serum glutamic oxaloacetic transaminase and serum glutamate pyruvate transaminase] increased significantly.

More than 25% (n = 220) of the reports mentioned a medication that would be considered to be a high-alert medication in either the acute or ambulatory care settings. Of the 25 most commonly mentioned medications (see Table 2), 10 (40%) were high-alert medications. Most of these high-alert medications were opioids, but two medications, insulin and warfarin, were not. Forty percent (n = 28) of the 70 events involving high-alert medications resulted in patients being transferred to a higher level of care.

### Table 2. Top 25 Medications Involved in Medication Errors in Events in which Patients Took Their Own Medications (n = 526, 59.8% of total reports)

<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>NUMBER OF REPORTS</th>
<th>PERCENTAGE OF TOTAL REPORTS (N = 879)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OxyCODONE*,†</td>
<td>77</td>
<td>8.8%</td>
</tr>
<tr>
<td>ClonazePAM*</td>
<td>44</td>
<td>5.0</td>
</tr>
<tr>
<td>ALPRAZolam*</td>
<td>43</td>
<td>4.9</td>
</tr>
<tr>
<td>HYDROcodone*†</td>
<td>41</td>
<td>4.7</td>
</tr>
<tr>
<td>LORazepam*</td>
<td>36</td>
<td>4.1</td>
</tr>
<tr>
<td>Insulin†</td>
<td>34</td>
<td>3.9</td>
</tr>
<tr>
<td>Metoprolol</td>
<td>25</td>
<td>2.8</td>
</tr>
<tr>
<td>Methadone*,†</td>
<td>21</td>
<td>2.4</td>
</tr>
<tr>
<td>Zolpidem*</td>
<td>19</td>
<td>2.2</td>
</tr>
<tr>
<td>Diazepam*</td>
<td>19</td>
<td>2.2</td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>19</td>
<td>2.2</td>
</tr>
<tr>
<td>Propoxyphene with acetaminophen*,†</td>
<td>16</td>
<td>1.8</td>
</tr>
<tr>
<td>Aspirin</td>
<td>14</td>
<td>1.6</td>
</tr>
<tr>
<td>Warfarin†</td>
<td>13</td>
<td>1.5</td>
</tr>
<tr>
<td>MetFORMIN†</td>
<td>11</td>
<td>1.3</td>
</tr>
<tr>
<td>Morphine*,†</td>
<td>11</td>
<td>1.3</td>
</tr>
<tr>
<td>Carisoprodol*</td>
<td>11</td>
<td>1.3</td>
</tr>
<tr>
<td>DiphenhydrAMINE</td>
<td>10</td>
<td>1.1</td>
</tr>
<tr>
<td>FentaNYL*,†</td>
<td>10</td>
<td>1.1</td>
</tr>
<tr>
<td>Temazepam*</td>
<td>10</td>
<td>1.1</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>9</td>
<td>1.0</td>
</tr>
<tr>
<td>Sertraline</td>
<td>9</td>
<td>1.0</td>
</tr>
<tr>
<td>Fioricet®* (i.e., acetaminophen, butalbital, and caffeine)</td>
<td>8</td>
<td>0.9</td>
</tr>
<tr>
<td>HYDROMorphone*,†</td>
<td>8</td>
<td>0.9</td>
</tr>
<tr>
<td>Lisinopril</td>
<td>8</td>
<td>0.9</td>
</tr>
</tbody>
</table>

* Controlled substance (categories II through V)  
† High-alert medication

**Reasons Patients Bring Their Own Medications**

Analysts also reviewed event descriptions to determine if reporting facilities mentioned the reasons why patients felt the need to bring in and self-administer their own medications. Most of the reports submitted to the Authority involved situations in which the patients brought in their medications without informing facility staff and self-administered them. However, at least 45 reports (5.1%) described errors that occurred in which organizations were intentionally using patients’ own medications.

A nurse gave an extra dose of fenofibrate [which was the patient’s own medication] instead of the thalidomide that was scheduled. The patient’s thalidomide [also her home medication] was later found in another patient’s drawer. The next dose of fenofibrate was held and thalidomide was administered.

Vytorin® [a combination tablet of ezetimibe 10 mg and simvastatin...
Patients were simply unaware that the direc-
tions while in the hospital.

The patient's father was upset with the
delay of medications reaching
the nursing unit for his daughter. He
proceeded to administer her Imuran®
[azathioprine] brought in from her
home. This medication was not
approved by pharmacy.

A patient was agitated about their
elevated glucose readings for the past
two checks. Adjustments were made
to NovoLog® scale during the day
shift; however, following the last
elevated glucose reading, the patient
expressed concerns about inadequate
treatment. Calls were made to the
resident to explain the situation;
patient was assured that a sliding
scale order would be entered for the
elevated reading, but no order was
received. Upon explanation of this
to the patient, she stated, “I already
took my own insulin.” She stated,
“I took Humalog 10 units.” Review
of glucose level was 95 and, when
rechecked again, the glucose was 65.
RISK REDUCTION STRATEGIES

Many institutions are confronted with managing the patient’s own medications that are brought in from home, and organizations can have procedures in place for the control and administration of these medications. Consider the strategies described in this section, which are based on a review of events submitted to the Authority and observations at the Institute for Safe Medication Practices:

Proactively assess the risk associated with the use of patients’ own medications. For example, consider performing a failure mode and effects analysis to assess the risk associated with the various scenarios in which the facility may need to use a patient’s own medications.

Develop a screening method for patients admitted to the facility who have a previous history of bringing in their own medications, and take proactive steps to deter this process.

Provide patient and family education upon admission to the facility about the facility’s policies in regard to patients’ use of their own medications.

Review medication administration records (MARs) to determine how the directions for patients’ own medications are expressed. For example, some organizations simply state “use home meds” on the MAR, which does not reflect the actual dosage or frequency of administration for those medications.

Review current organization policies and procedures to ensure the following items are addressed:

- Identify the types of personal medications that are allowed and not allowed for use and in which, if any, circumstances they are allowed to be used while the patient is in the hospital. Examples of circumstances allowing for personal medication use could include the following:
  - The medication is not available on the hospital’s formulary, including those medications that are part of a restricted distribution system, compounded by an outside specialty pharmacy, investigational medications, and controlled substances.
  - There are no therapeutic alternatives on the formulary.
  - The patient is on a continuous parenteral infusion of such medications as Flolan®, Remodulin®, or an insulin pump.

- Develop an alternative plan to provide the medication to the patient if the pharmacy is unable to supply it before the next dose is due.

- Determine if the patient should be allowed to self-administer his or her own medications. For example, stating that if a patient’s home medication must be used, it should be administered by a nurse.

- Address the pharmacy’s role in this process, including the following:
  - If the medications are not to be allowed for use, return them to the patient’s family or caregivers. If this is not possible, securely store the medications in a safe location (e.g., the pharmacy). Ensure a process is in place to return the medications to the patient or family on discharge from the facility.
  - Ensure proper verification procedures of patients’ own medications. Specify that the pharmacist is the health professional who will identify the medications, and include guidelines for another health professional to identify these medications if the pharmacist is unavailable. In one published account of a hospital’s assessment of medications that patients brought to the hospital, pharmacists were able to identify 95% of the medications, with 1 in 15 containers of these medications being mislabeled or unlabeled.

- Develop a process to ensure the proper labeling of any patient’s personal medications that are allowed for use in accordance with state regulations, making sure that the medications are identifiable, in good condition, and not expired. Specific challenges to be addressed include the following:
  - Changes in the frequency of administration. For example, if a patient was taking their medication from home once daily but the directions have changed in the hospital to two times a day.
  - The use of bar codes. If the organization uses bar coding at the point of care, the pharmacy will need to apply a bar code to each medication brought in by the patient for use within the facility.

Before medications are sent to the nursing unit, place stickers or some other means of notification on containers for the medications that have been reviewed by a pharmacist.

Use a documented tracking mechanism to communicate the use of patients’ personal medications.
medications, especially when patients bring in controlled substances or investigational medications.

- If controlled substances are allowed, dispense them in unit-dose form.

- Develop a standardized approach in regard to the storage of patients’ own medications in the patient care area.

- In accordance with hospital policy, report any adverse events associated with the use of patients’ personal medications.

- Ensure procedures are in place to return patients’ personal medications before discharge, and note the final disposition of the medications in the pharmacy records.

CONCLUSION

In Pennsylvania, almost 900 medication errors have been reported from July 1, 2004, through January 31, 2011, involving patients taking their own medications while in healthcare facilities, many times unbeknownst to healthcare practitioners. One or more controlled substances were involved in over 40% of these events reported to the Authority, and more than 25% of these reports mentioned high-alert medications. Employing proactive strategies to address situations in which patients may bring in their own medications and implementing a screening method for patients admitted to the facility with a previous history of bringing in their own medications can be steps that are prioritized to prevent potential harm to patients.

NOTES


(See Self-Assessment Questions on next page.)
LEARNING OBJECTIVES

— Recognize the types of medication errors that occur when patients bring their own medications into the hospital.
— Recall the most common types of drugs involved in medication errors when patients use their own medications.
— Identify reasons frequently mentioned in case reports indicating why patients bring their medications into the hospital.
— Select risk reduction strategies for healthcare organizations to proactively address the safe use of patients’ own medications.

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. Examples of miscommunication between patients and staff that may lead to patients taking their own medications while in the hospital include all of the following EXCEPT:
   a. Patients are unaware of which medications are prescribed or given to them.
   b. Patients are informed that their medications are temporarily stopped (i.e., hold order).
   c. Patients do not realize that the directions for a particular medication are different in the hospital compared with at home.
   d. Patients are not told that they should not take their own medications while in the hospital.
   e. Patients are not completely satisfied with the care they are receiving.

2. Which of the following statements reflect standards from the Joint Commission?
   a. The hospital defines when medications brought into the hospital by patients or their families cannot be administered.
   b. After the use or administration of a medication brought into the hospital by a patient, the hospital identifies the medication and visually evaluates the medication’s integrity.
   c. The hospital informs the prescriber and patient if the medication brought into the hospital by patients is permitted.
   d. The hospital safely controls medications brought into the hospital by patients, their families, or licensed independent practitioners.

3. Reasons why a patient may feel the need to bring their medications into the hospital include all of the following EXCEPT:
   a. To obtain an accurate medication list for medication reconciliation.
   b. To provide a drug that is on the hospital’s formulary.
   c. To avoid an interruption in therapy.
   d. To save money.
   e. To ease anxiety over the loss of self-control of their care.

4. According to the event reports submitted to the Pennsylvania Patient Safety Authority involving patients taking their own medications, all of the following statements in regard to the types of medications brought into the hospital by patients are true EXCEPT:
   a. Fifteen of the top 25 drugs mentioned involved controlled substances.
   b. Almost 20% of the reports mentioned patients taking more than one medication.
   c. Patients also brought in over-the-counter medications, including Tylenol®, Zantac®, aspirin, Pepcid®, and diphenhydrAMINE.
   d. Insulin and warfarin were the types of high-alert medications mentioned most often in the reports.
While in the hospital, a patient self-administered atenolol 50 mg from her own supply. The patient brought in her medication from home because she thought that it was okay to take her high blood pressure medicine. However, the patient’s attending physician had not ordered this medication for the patient.

5. What proactive strategies may help to prevent these types of errors?
   a. Develop a screening method for patients admitted to the facility who have a previous history of bringing in their own medications.
   b. Inform the patient and family upon admission to the facility about the facility’s policies in regard to patients’ use of their own medications.
   c. If the medication was brought in for reconciliation purposes, ask the patient’s family to take the medication home.
   d. All of the above are true.
   e. Only B and C are true.

SELF-ASSESSMENT QUESTIONS (CONTINUED)