Improving the Reporting of Medication Errors and Adverse Events at the Veterans Affairs–New York Harbor Healthcare System

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INTRODUCTION
According to the Institute of Medicine’s (IOM’s) 1999 report, To Err Is Human: Building a Safer Health System, between 44,000 and 98,000 patients die each year in hospitals as a result of medical errors, thereby making these misadventures the eighth leading cause of death.1 With an estimated cost of $17 to $29 billion each year, 38% of these mistakes are errors in drug administration, and only 2% of these errors are intercepted.2,3 These findings have spurred the nation to make patient safety a key issue and to move toward improvement. Since realizing that medical errors have been underreported, the IOM has recommended establishing error-reporting systems that can help identify errors and allow hospitals to learn from these mistakes.

Generally, two types of incidents are reported: close calls and adverse events.

The Veterans Affairs National Center for Patient Safety defines an **adverse event** as an “untoward incident, therapeutic misadventure, iatrogenic injury, or other adverse occurrence directly associated with care or services provided within the jurisdiction of a medical center, outpatient clinic, or other Veterans Health Administration (VHA) facility.”4

A **close call** is an “event or situation that could have resulted in an adverse event but did not, either by chance or through timely intervention.”4 Such events have also been referred to as “near-miss” incidents. An example of a close call would be a surgical procedure that is almost performed on the wrong patient because of a lack of patient identification but that is caught at the last minute. Close calls are opportunities for learning, and they afford the chance to develop preventive strategies and actions before a patient has been harmed. However, because close calls are not always detected, and because they sometimes appear in the patient’s medication record as an adverse event, they are often underreported.

An incident reporting system or “culture of safety” that focuses on a nonpunitive approach allows individuals to report errors without fear of blame. This type of error-reporting system is confidential and impartial, it offers incentives for reporting close calls and adverse events, and it ensures that there is no retribution for those reporting. Therefore, encouragement, rewards, staff education, open communication, and department recognition can increase medical-error reporting.5

BACKGROUND
In October 2006, several nurses, pharmacists and providers commented that the medication error–reporting process at the Veterans Affairs–New York Harbor Healthcare System (VA–NYHHS) was lengthy and cumbersome and did not promote the reporting of all medication close calls and adverse events. The staff’s concerns were validated by the medication error–reporting data.

In fiscal year 2006 (from October 1, 2005, to September 30, 2006), the NYHHS reported a total of 61 medication errors. The reporting range included two acute-care facilities, one nursing facility, and several outpatient clinics and residential treatment programs. A breakdown of the total number of reported medication errors appears in Figures 1 through 4. The number of medication errors (n = 61) for fiscal year 2006 appeared to be grossly underreported, given that the total number of outpatient prescriptions was 142,203 and the number of inpatient unit doses dispensed was 151,730,484 that same year.

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AN INTERDISCIPLINARY APPROACH TO REPORTING ERRORS

In an effort to streamline the medication error-reporting process and to increase reporting of close calls and adverse events, an interdisciplinary team consisting of nurses, pharmacists, and employees from the Quality Management (QM) Office was assembled. The group first tackled the reporting vehicle, known as the Incident Report (VA Form 10-2633). Even though staff members of the unit were accustomed to using that form to report all types of incidents, they felt that using the Medication Incident Evaluation Report instead to report medication errors would be quicker and easier. At that time, only the Medication Error Committee was using the form as duplicate documentation to categorize medication errors that were reported to Quality Management via the Medication Incident Evaluation Report (Figure 5).

The interdisciplinary committee reviewed the existing reporting tool with the idea of simplifying the document and making it more user-friendly. After much discussion, the team edited the Medication Error Evaluation Report so that incidental questions were removed, a section for post-incident evaluation by a physician was added, and the bottom portion of the form was grayed-out (to be completed by the Medication Error Committee).

After the revisions were made, the committee agreed that the form was an acceptable and comprehensive tool with which to report medication errors. After that decision was made, the staff was instructed informally by their service chiefs, and formally by a Senior Leadership broadcast message, to use the Medication Error Evaluation Report to list all close calls and adverse events.

TRAINING PHARMACY RESIDENTS AND PHARMACY STUDENTS

In addition to improving the reporting tool, the pharmacy service formally trained all pharmacy residents and students in Internal Medicine to report medication close calls and adverse events using the newly edited form. Like medical residents, pharmacy residents are on the front line of patient care and see firsthand the errors that occur. The Director of the VA Harbor Pharmacy Residency Program revised the Resident Portfolio, a tool that captures the resident’s workload, to include reporting sections on medication errors and adverse events. With support and guidance from the Clinical Pharmacy Specialists and preceptors of Internal Medicine rotations, pharmacy residents and pharmacy students started to report medication errors to the Quality Management staff on a regular basis.

PROMOTING A CULTURE OF SAFETY

A culture of fear stifles creativity and innovation, and it impedes continuous improvement by enabling defects to remain undetected—or unreported. Fear fosters gaps between “what we know” and “what we do.” To close this gap, it is imperitive to promote and to support a culture in which staff members can search for defects and can continually seek and eliminate the flaws in the system. When employees are afraid or hesitant, productivity suffers. Fear drives people to remove the source of fear, not the source of the problem. Improved performance cannot occur unless staff members feel comfortable in reporting defects and speaking truthfully and are confident that
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(Revised 2/1/07)

DEPARTMENT OF VETERANS AFFAIRS
NEW YORK HARBOR HEALTH CARE SYSTEM

MEDICATION INCIDENT EVALUATION REPORT

☐ Brooklyn Campus ☐ New York Campus ☐ St. Albans Campus

Date of Incident: _______ Time: _______ Unit: _______ Person reporting occurrence: ____________________________

Patient Name: ____________________ SSN: ____________ Reviewed by: ________________________

Medication(s) involved: ____________________________

Route:

☐ PO ☐ IV ☐ IM ☐ SC ☐ OTHER

☐ PO ☐ IV ☐ IM ☐ SC ☐ OTHER

Brief description of error (including outcome):

MD advised: ☐ Yes ☐ No Name of patient’s MD: ________________________________

Action Taken:

Recommendation followed: ☐ Yes ☐ No; If No – enter reason: ______________________________

****Please complete top sections of this form and send to the Quality Management Office****

VANYHHS MEDICATION ERROR TEAM / MUE SUBCOMMITTEE REVIEW

<table>
<thead>
<tr>
<th>TYPE OF ERROR</th>
<th>BREAKDOWN POINT</th>
<th>PREVENTABLE</th>
<th>POTENTIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omission</td>
<td>Not transcribed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrong drug</td>
<td>Transcribed incorrectly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra dose</td>
<td>Charting error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrong dose</td>
<td>Communication problem</td>
<td></td>
<td></td>
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<tr>
<td>Wrong time</td>
<td>Physician order problem</td>
<td></td>
<td></td>
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<tr>
<td>Wrong rate</td>
<td>Wrong medication dispensed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrong route</td>
<td>Medication unavailable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrong preparation</td>
<td>Labeling problem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrong dosage form</td>
<td>Medication administration error</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrong patient</td>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OUTCOME

☐ Category A: Circumstances or events that have the capacity to cause error.
☐ Category B: An error occurred but the medication did not reach the patient.
☐ Category C: An error occurred that reached the patient but did not cause patient harm.
☐ Category D: An error occurred that resulted in the need for increased patient monitoring but no patient harm.
☐ Category E: An error occurred that resulted in the need for treatment or intervention and caused temporary patient harm.
☐ Category F: An error occurred that resulted in initial or prolonged hospitalization and caused permanent patient harm.
☐ Category G: An error occurred that resulted in permanent patient harm.
☐ Category H: An error occurred that resulted in a near-death event (anaphylaxis, cardiac arrest).
☐ Category I: An error occurred that resulted in patient death.

ACTION TAKEN:

Subcommittee Chairperson/Designee: ________________ Date of review: ________________

Figure 5 Medication Incident Evaluation Report. MUE = medication use evaluation; VANYHHS = Veterans Affairs–New York Harbor Healthcare System.
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their suggestions will be taken seriously.

In the 2005 Patient Safety Culture Survey (total respondents = 601), the staff gave VA–NYHHS a mean patient safety grade of 3.97 (acceptable, borderline very good), which was higher than the means of the Veterans Integrated Service Network (VISN 3) (3.89) and the VA nationally (3.87). Despite that high overall grade, the NYHHS grade was below the VA national mean for the following patient safety dimensions: Nonpunitive Response to Error (–0.86) and Perceptions of Patient Safety at Your Facility (–0.12). These results indicated that the VA–NYHHS staff was still associating incident reporting with punitive consequences.

The interdisciplinary committee at the VA–NYHHS promoted the new reporting tool through educational awareness. Through this awareness, the interdisciplinary team also communicated the value of reporting close calls, not only adverse events, to Quality Management. Reporting close calls provides an opportunity to investigate a potential systems problem without inadvertently causing patient harm. The Nursing Informatics Coordinator educated all nursing staff to report “missing dose requests sent to pharmacy” as a result of delivery of the wrong drug or dose to Quality Management via the Medication Error Evaluation Form.

In addition, incident reporting and medication management are addressed through the VA–NYHHS’s monthly Priority Focus Area (PFA) Tracer Rounds. Using the methodology of the Joint Commission on Accreditation of Healthcare Organizations, Quality Management staff and nurse educators paired up to conduct those tracer rounds on specific topics. While doing so, every effort was made to reverse the prevailing perception that reporting medication errors would result in punitive consequences. Errors in the delivery of health care are common and are widely recognized as resulting from system failures.5–8 Medication errors result from poor systems and human psychology rather than from poor performance.9,10 The interdisciplinary team focused on the conditions under which individuals work and tried to avert errors or mitigate their effect. To promote the culture of safety and to increase reporting of close calls and adverse events at the VA–NYHHS, the interdisciplinary committee asked the P&T committee to review the data and to suggest ways to reward employees for reporting close calls and adverse events.

As we have learned, the efforts of the interdisciplinary committee have paid off handsomely. So far, for three quarters only, in fiscal year 2007, 156 medication close calls and adverse events (see Figure 2) have been reported to Quality Management—a 156% increase from the total medication errors reported in fiscal year 2006 (see Figure 1).

The increase in reporting has given the Medication Error Committee and newly formed Patient Safety Committee a robust supply of data to work with and better insight into the most prevalent systems issues contributing to close calls and adverse events. To date, the Patient Safety Committee has facilitated the following actions to reduce medication errors:

- Reviewed a medication error in which the ACE-inhibitor benazepril (Lotensin, Novartis) was ordered instead of the antiallergy and antiparkinson agent Benadryl (diphenhydramine, Pfizer). The Patient Safety Committee recommended that “tall man” lettering would be used for both Benadryl and Benazepril.
- Reviewed an incident in which a stat (immediate) order of the antimicrobial agent vancomycin (Vancocin, Baxter) was not administered until three hours later. The Patient Safety Committee recommended that stat orders be printed on a different printer in the pharmacy.
- Eliminated the potential for an overdose error involving hydrocortisone. After reviewing an incident in which an excessive dose of hydrocortisone (500 mg) was ordered or administered, the Patient Safety Committee decided to eliminate the option of ordering this amount of the drug from the Computerized Patient Record System’s menu.

All of those systems vulnerabilities were identified and were able to be corrected because of the increase in medication error reporting. Defects in a system can be seen as thorns or roses. Whereas some managers fear the unearthing of defects, enlightened leaders welcome their discovery and, in fact, encourage the staff to actively seek them out. Defects are treasures to be valued because they present opportunities for improvement. Only by identifying flaws in the system can we identify—and correct—the fundamental or systemic root causes of errors.

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REFERENCES