

# Medication Safety Huddles: Teaming Up to Improve Patient Safety

Kerry Wilbur and Kathy Scarborough

## INTRODUCTION

The focus on patient safety in health care has intensified over the past 5 years. The 1999 Institute of Medicine report *To Err is Human*,<sup>1</sup> which outlined the alarmingly high rate of medical errors in the United States, mirrored recognition of iatrogenic injury in Australia<sup>2</sup> and the United Kingdom<sup>3</sup> and generated an unprecedented response in health care policy. Many health care organizations launched initiatives to promote patient safety and, in December 2003, the Canadian government funded establishment of the Canadian Patient Safety Institute.<sup>4</sup> Recently, much anticipated data for a national estimate of hospital-based adverse events has been published.<sup>5</sup> In this review of hospital records for 3745 randomly selected patients from across the country, it was estimated that 7.5% of patients admitted to acute care hospitals experienced one or more adverse events.

Although drug-related hospital admissions and adverse drug reactions represent major contributors to negative patient outcomes, US data indicate that adverse events specific to medication errors account for 7000 deaths annually.<sup>6,9</sup> Medication use in hospitals is complex and susceptible to error at multiple points including prescribing, transcribing, dispensing, administration, and monitoring. Medication errors, either potential or actual,<sup>10</sup> are considered preventable events that may cause or lead to inappropriate medication use or patient harm. Although proposed safeguards that hinge principally on technological advances (computerized physician order entry, point-of-care unit-dose dispensing cabinets, bar-code technology) may minimize risk, they will likely never entirely overcome the human element in medication error.<sup>11-13</sup>

The original concept of using safety briefings or “medication safety huddles” as a strategy to promote a culture of safety in health care settings has been credited

to the Institute for Healthcare Improvement.<sup>14</sup> A simple and efficient tool for front-line staff, these small briefings represent an opportunity to share information about actual or potential medication safety problems and concerns on a regular basis. Brainstorming leads to suggestions for interventions that are implemented in a timely fashion. Medication safety huddles can be used to identify and address factors contributing to medication errors, educate nursing staff about medications, and promote a culture of change among participants. Ultimately, the goal of medication safety huddles is to reduce the risk of medication errors and improve the quality of patient care.

Activities that foster a “culture of safety” are acknowledged as fundamental in enhancing patient safety in any organization. In a recent survey of nurses, more than one-third of respondents said that they had failed to report one or more medication errors during their career for fear of personal or professional repercussions.<sup>15</sup> Clearly a workplace environment that focuses on finding fault can suppress medication error reporting and may lead to dangerous situations. It may also take its toll on productivity and morale as staff are less inclined to be creative, courageous, and even ethical in a workplace where energies are invested in blame.<sup>16</sup>

First employed in aviation and construction, safety briefings have now been adopted in health care settings and patient care facilities.<sup>17,18</sup> We describe our experience in initiating medication safety huddles on the acute adult medicine unit at our hospital.

## DESCRIPTION OF PROGRAM

The Acute Medical Unit (AMU) at Vancouver General Hospital is a 43-bed unit admitting adult patients who require medical management of diverse diagnoses. Although many of the patients are critically

ill, there are no ventilators, and no drug therapy requiring electronic cardiac monitoring is administered in this setting. The ratio of nursing staff to patients ranges from 1:2 to 1:6, depending on patient acuity and time of day (e.g., day versus night shift). Three clinical pharmacists are assigned to adult medicine and family practice patients, and the AMU is one site where pharmacists execute their daily pharmaceutical care responsibilities. Automated dispensing cabinets supply narcotics and controlled drugs as well as ward stock. The pharmacy department offers a centralized IV admixture service and traditional 7-day distribution for personal medications.

Patients are admitted to the AMU through the internal medicine and subspecialty services. The Vancouver General Hospital is the major patient care, teaching, and research hospital in British Columbia, and the AMU is consequently a site for core adult medicine rotations in medical school, nursing, and allied health training programs.

The first proposal to initiate medication safety huddles on our unit stemmed from a project conducted 3 years ago by a graduate nursing student, who reviewed the implementation of safety briefings in the adult medical unit of a neighbouring hospital. The student concluded that the number of medication incident reports (anecdotal and written) was unacceptably high and that nurses' attitudes toward medication errors were generally poor. Although unit management and the nursing environment at the authors' institution evolved favourably over the ensuing years, our concern about medication safety was underscored by results from studies demonstrating that identified drug-related adverse events occurred predominantly on medical and not surgical services.<sup>4,19</sup> We decided to conduct a formal 3-month trial of medication safety huddles on our AMU.

Nursing and allied health care staff were introduced to the concept of a medication safety huddle through a mock briefing presented at a staff meeting. Posters explaining the philosophy of medication safety huddles were posted throughout the unit and in the staff room. Nursing staff was also asked to complete "safety culture" surveys for future comparisons. The same week, medication safety huddles were launched on the unit. Nurses and a pharmacist gathered twice a week at a preassigned area at a designated time. Nursing staff were permitted to continue their patient care duties if necessary and rejoin the discussion when able to do so. Each session was 10 to 15 min long and began with 2 questions posed by the clinical nurse educator to generate dialogue:

- Have you had concerns about medication delivery this week?

- Have you had any errors, near misses, or "good catches" that you would like to share?

During the ensuing discussion, staff members explored potential sources of medication errors or near errors and strategies to prevent these problems in future. The nurse educator collected data from each session, and accountability for follow-through was assigned. A summary was published in the monthly AMU newsletter, detailing discussion and follow-up for specific issues identified in each medication safety huddle.

Ways of resolving safety issues have been classified in 5 categories by our organization's risk management team:

- Organizational policy: a statement or commitment by the organization of expected outcomes or behaviour (e.g., medication refill orders will be sent 24 h before they are required).
- Internal systems and structures: identification of the processes, structures, and individuals involved in putting a policy into practice (e.g., nurse completes refill order and faxes the order to the pharmacy; pharmacy technician fills the order and sends the refill).
- Front-line tools and forms: communication and documentation records used within systems (e.g., consent forms, patient education brochures).
- Front-line practice guidelines: documents setting out directions on how to implement a procedure and use tools and forms (e.g., patient care guidelines, parenteral drug therapy manual).
- Education: activities to increase awareness and understanding of policies, systems, tools, and guidelines, as well as prescribing appropriateness.

## RESULTS TO DATE

The pilot trial of medication safety huddles on our AMU has yielded promising results. Examples of medication issues identified and interventions implemented during this short period are summarized in Table 1. Several unit and hospital-wide initiatives have been generated from discussions arising during medication safety huddles. For example, nurses' concerns about inconsistent insulin orders (e.g., sliding-scale insulin prescribed without specification of frequency or without consideration of continuous or enteral feeding) have prompted development of a preprinted order form for sliding-scale insulin on our unit. Many ideas to minimize medication error have been conveyed from our unit to the hospital's Medication Safety Committee to be considered for hospital-wide implementation, including simple changes to the medication administration record



**Table 1. Examples of Outcomes from Medication Safety Huddles**

Category	No. of Issues	Example	
		Issue	Outcome
Organizational policy (statement or commitment by the organization of expected outcomes or behaviour)	3	Medication refill orders not being completed in timely fashion by pharmacy department	Reiteration of existing policy, whereby refill orders are required 24 h in advance of need, particularly given that reduced overnight dispensary hours no longer accommodate < 24-h processing
Internal systems and structures (processes and personnel involved in putting a policy into practice)	10	One-time doses appearing more than once on MAR (i.e., patient might receive more than one dose)  MAR time recorded for shift change (e.g., 0700) contributes to confusion about who is responsible for medication administration, leading to missed or delayed doses	Pharmacy department working on strategy to adapt MAR on a hospital-wide level, which will involve a hospital-wide review of administration times appearing in the MAR
Front-line tools, forms, and practice guidelines (communication and documentation records used within systems and documents setting out directions for use of these tools and forms)	8	Digoxin administered according to administration directions for Digibind (antibody for digoxin)  Incompatible medication hung with other infusing solutions containing potassium  Concerns regarding temporary discharge of patient who is receiving parenteral narcotics	PDTM will be adapted to help distinguish the monographs for these 2 medications  Nurses will label the tubing line with a sticker indicating that infusion solution contains potassium  Pharmacy guideline exists for this process and is now available to staff on nursing unit
Education of providers (activities to increase practitioner medication knowledge base, as well as awareness and understanding of policies, systems, guidelines, and associated tools)	9	Many vials of expired insulin available on unit, as nursing staff were unclear about vial outdates  Inadequate amount of parenteral drug administered through infusion pump	Expiry date clarified by pharmacist; nurses will note on the vial label the date first used  Pharmacy has informed nursing staff of 5% to 10% volume overflow and the need to account for this extra volume when programming pump to ensure that all drug is infused

MAR = medication administration record, PDTM = parenteral drug therapy manual.

(e.g., shading of alternate lines) and proposals pertaining to safe storage of patients' personal medications from home (e.g., narcotics).

## DISCUSSION

During the pilot project, it became clear that not only were the medication safety huddles helping us to identify important safety issues not captured in medication incident documentation processes, but they were also readily facilitating resolution of these problems.

Over 90% of hospital pharmacies have medication incident reporting systems.<sup>10</sup> One survey has shown that most nurses know that incident reporting is the primary means for identifying medication errors.<sup>15</sup> Unfortunately, however, incident reporting is a reactive approach to medication error. Medication

safety huddles emphasize a proactive approach to identifying and preventing error and to effecting change in medication safety systems. In this context, near misses or "good catches" are considered as important as actual errors. Input from nurses has played a critical role in elucidating factors that contribute to medication errors and near misses that may not have been considered previously.

Enhancing pharmacist–nurse relationships is pivotal for safe medication practices in the hospital setting. Both groups of health care professionals have knowledge and skills that are specific to their profession, yet complementary to one another. They have shared concern for rational drug therapy and are uniquely positioned to collaborate in identifying and preventing potential or actual medication error.<sup>20</sup>

**Table 2. Keys to Success of Medication Safety Huddles\***

---

**Nonpunitive approach**

Staff members feel comfortable sharing information when there are assurances that the information will not be used punitively later on.

---

**Identification of opportunities for improvement**

As problems are recognized, discussion should centre on problem-solving.

---

**Appropriate frequency**

Patient care units vary in staff size and number of patients. Medication safety huddles should be held frequently enough to maintain a safety culture, but not so often that staff view them as burdensome rather than helpful.

---

**Strong facilitation**

Each medication safety huddle needs a leader to convene and direct discussion, as well as to support staff in focusing on solutions. The leader also assigns follow-up responsibilities.

---

**Limited duration**

Staff will be taken away from usual duties and will likely be concerned about patient care during medication safety huddles. Attendance can be maximized if a time limit is set and enforced.

---

**Follow-up**

Communication is an important element of follow-up, as staff must see that unit managers are listening to their ideas and acting on them.

---

**Pharmacist participation**

A pharmacist's presence as contributor and resource promotes the collaborative process; the pharmacist can often immediately address medication safety concerns.

---

**Other forums**

Time limits are easier to maintain when other opportunities exist for staff to discuss safety issues not related to medication (e.g., staff meetings, retreats, mini-rounds)

---

\*Adapted from www.IHI.org with permission of the Institute for Healthcare Improvement (IHI), © 2004.

The success of our medication safety huddles relies not only on strong facilitation by the clinical nurse educator, but also on the participation of the clinical pharmacist (Table 2). Numerous studies have proven that pharmacists can reduce medication-related adverse events when they are involved in prescription decisions during bedside rounds with physicians.<sup>21-23</sup> However, pharmacists must also exhibit leadership in other multidisciplinary initiatives focused on enhancing patient safety.<sup>10,13</sup> Medication safety huddles represent another opportunity to promote the role of the hospital pharmacist at a grassroots level. Anecdotal feedback from clinical pharmacists participating in medication safety huddles on our AMU has been exceptionally favourable. Most have found the huddles professionally satisfying, as they are able to share their medication knowledge and advocate safe medication use during these briefings. Conversely, they have learned more about medication delivery systems and administration from nursing staff. The 15-min time restriction makes it feasible for pharmacists to attend the medication safety huddles, as time away from other

direct patient care activities is negligible. The response of nursing staff has been similarly positive. On repeat administration of the safety culture survey to nurses 3 months after implementation of medication safety huddles, there was greater acknowledgement that staff are encouraged to report medication errors and greater acknowledgement that medication errors often occur because of system issues rather than an individual's mistake; respondents also expressed greater confidence in the pharmacy department.

Ongoing refinement of the medication safety huddles includes streamlining data collection, clearly defining a safety concern as a reportable medication incident, and distinguishing reportable medication incidents from near-miss medication errors. Although solutions to local issues may be quickly implemented on the AMU, accountability and responsibility must also be assigned for issues that cannot be addressed at the unit level, for which a response must be obtained from the hospital organization.

## FUTURE DIRECTIONS

Medication safety huddles are now a fixture on the AMU. Because of supportive staff response and the significant medication safety information that has been generated, these medication safety huddles merit continuation, especially given the minimal investment of time and resources. In fact, medication safety huddles will soon be introduced on 8 other patient care units at our hospital. A multidisciplinary steering committee will be charged with storing the data collected to allow sharing of information, to improve consistency, and to reduce duplication of effort in developing new interventions. These safety briefings form one element of a broader safety initiative launched by our health authority in response to expressed interest in identifying and targeting global inefficiencies related to medication safety. Medication safety huddles are currently being introduced to other hospitals within the Vancouver Coastal Health authority.

## CONCLUSIONS

Our experience in implementing medication safety huddles on our AMU has been positive. We encourage other multidisciplinary teams to explore this relatively easy and efficient means to promote a culture of safety and to augment collaboration between pharmacy and nursing staff. It is yet another opportunity for pharmacists to exhibit leadership in enhancing patient safety in the hospital setting.



## References

1. Kohn LT, Corrigan JM, Donaldson MS, editors. *To err is human: building a safer health system*. Washington (DC): National Academy Press; 1999.
2. Wilson RM, Runciman WB, Gibberd RW, Harrison BT, Newby L, Hamilton JD. The Quality in Australia Health Care Study. *Med J Aust* 1995;163:458-76.
3. Vincent C, Neale G, Woloshynowych M. Adverse events in British hospitals: preliminary retrospective record review. *BMJ* 2001;322:517-9.
4. National Steering Committee on Patient Safety. Building a safer system. A national integrated strategy for improving patient safety in Canadian health care. Ottawa (ON): The Committee; 2002. Available at: [http://rcpsc.medical.org/publications/building\\_a\\_safer\\_system\\_e.pdf](http://rcpsc.medical.org/publications/building_a_safer_system_e.pdf). Accessed 2005 May 16.
5. Baker RG, Norton PG, Flintoft V, Blais R, Brown A, Cox J, et al. The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. *CMAJ* 2004;170:1678-86.
6. Peyriere H, Cassan S, Floutard E, Riviere S, Blayac JP, Hillaire-Buys D, et al. Adverse drug events associated with hospital admission. *Ann Pharmacother* 2003;37:5-11.
7. Pirmohamed M, James S, Meakin S, Green C, Scott AK, Walley TJ, et al. Adverse drug reactions as a cause of admission to hospital: prospective analysis of 18,820 patients. *BMJ* 2004;329:15-9.
8. Classen DC, Pestotnik SL. Adverse drug events in hospitalized patients: excess length of stay, extra costs and attributable mortality. *JAMA* 1997;4:301-6.
9. Phillips J, Beam S, Brinker A, Holquist C, Honig P, Lee LY, et al. Retrospective analysis of mortalities associated with medication errors. *Am J Health Syst Pharm* 2001;58:1835-41.
10. Canadian Society of Hospital Pharmacists. Impact of hospital pharmacists on patient safety [background paper]. Ottawa (ON): The Society; 2003.
11. Bates DW. Using information technology to reduce rates of medication errors in hospitals. *BMJ* 2000;320:788-91.
12. Bogner MS. *Human error in medicine*. Hillsdale (NJ): Lawrence Erlbaum; 1994.
13. U D. Medication error reporting systems: problems and solutions. *New Med* 2001;1:61-5.
14. Safety briefings (IHI tool). Boston (MA): Institute for Healthcare Improvement; [2003]. Available at: <http://www.ihl.org/IHI/Topics/PatientSafety/MedicationSystems/Tools/Safety+Briefings+%28IHI+Tool%29.htm>. Accessed 2004 Jun 15.
15. Cohen H, Robinson ES, Mandrack M. Getting to the root of medication errors: survey results. *Nursing* 2003;33:36-46.
16. Pearson M. Don't play the blame game at work — when organizations live by a culture of seeking scapegoats, the consequences can be disastrous. *The Globe and Mail* [Toronto] 2004 Jun 25;Sect C:1-2.
17. Kent H. Talking about errors instead of hiding them goal of Vancouver hospital. *CMAJ* 2002;166:496.
18. Nielsen GA. Using human factors knowledge to increase patient safety across large and small hospitals while increasing employee satisfaction. Des Moines (IA): Iowa Department of Public Health; [2002]. Available at: [http://www.idph.state.ia.us/patient\\_safety/psconfpost.html](http://www.idph.state.ia.us/patient_safety/psconfpost.html). Accessed 2004 Jun 30.
19. Forster AJ, Clark HD, Menard A, Dupuis N, Chernish R, Chandok N, et al. Adverse events among medical patients after discharge from hospital. *CMAJ* 2004;170:345-9.
20. Pharmacy-nursing shared vision for safe medication use in hospitals: executive session summary. *Am J Health Syst Pharm* 2003;60:1046-52.
21. Scarsi KK, Fotis MA, Noskin GA. Pharmacist participation in medical rounds reduces medication errors. *Am J Health Syst Pharm* 2002;59:2089-92.
22. Kucukarsian SN, Peters M, Mulnarek M, Nafziger DA. Pharmacists on rounding teams reduce preventable adverse drug events in hospital general medicine units. *Arch Intern Med* 2003;163:2014-8.
23. Leape LL, Cullen DJ, Clapp MD, Burdick E, Demonaco HJ, Erickson JI, et al. Pharmacist participation on physician rounds and adverse drug events in the intensive care unit. *JAMA* 1999;282:267-70.

---

**Kerry Wilbur**, BScPharm, ACPR, PharmD, is a Clinical Pharmacotherapeutic Specialist — Medicine, CSU Pharmaceutical Sciences, Vancouver General Hospital, and Clinical Assistant Professor, Faculty of Pharmaceutical Sciences, University of British Columbia, Vancouver, British Columbia.

**Kathy Scarborough**, BScN, is a Clinical Nurse Educator, Acute Medical Unit, Vancouver General Hospital, Vancouver, British Columbia.

### Address correspondence to:

Dr Kerry Wilbur  
CSU Pharmaceutical Sciences  
Centennial Pavillion  
Vancouver General Hospital  
855 West 12th Avenue  
Vancouver BC  
V5Z 1M9

**e-mail:** [kwilbur@interchange.ubc.ca](mailto:kwilbur@interchange.ubc.ca)

No funding was provided for this project.

