

## The challenge: Balancing competency and error management

**By Carol Dueck,  
RN, BScN, MCE(c), Project Leader,  
Institute for Safe Medication Practices Canada**

When medication errors occur, nurse managers strive to determine the cause(s), identify the significant contributing factors within the system, or question staff competency. Critical care managers juggle this question against the backdrop of the demands of budget, bed utilization, patient outcome, and work life of the nursing staff that practises within chaotic environments with complex, severely-ill patients. Medication errors have a higher probability of occurring as hospitals care for patients with higher acuity, more complex treatments and lower staffing levels (Squires et al., 2005). Some of the more toxic drugs are given in combinations to vulnerable patients in critical care settings, which increase the risk of managing a harmful error.

Patient safety has finally taken a front row seat in managing patient care (Leape, 2005). Since the Canadian Adverse Events Study demonstrated that 7.5% of adverse events occur in every 100 hospital admissions and that one-third of the adverse drug-related deaths were preventable, organizations have been dedicating resources to improve safety (Baker et al., 2004). It is important that patient safety is embraced as the fabric of patient care and not simply as a new and additional dimension.

Nurse managers are encouraged to collaborate with risk managers and pharmacists to foster a culture of medication safety that embraces complex concepts to harmonize a non-punitive environment with the need for maintaining standards (Leape, 2005). When a medication error occurs, the traditional reaction has been to blame the nurse for not reacting perfectly in all situations and to question the competency of this staff member. If the medication error has a serious outcome, the next step frequently is a request for the educator and nurse to work on a learning exercise that addresses a lack of knowledge or competence.

Critical care educators and managers create relevant and interesting orientation and education sessions, while striving to find accurate methods to assess the “competency” of the nursing staff. Orientees to critical care are expected to quickly become expert in a multitude of new, complex skills. Critical decision-making amid the chaos of an emergency intervention can be a contributing factor to a medication incident and how the competency is assessed during the investigation of this incident can be fraught with subjectivity and be viewed as non-supportive by the nurse. Indeed, a survey in the United States found that many respondents clearly feared licensing action or a verbal or written reprimand if an error involving a policy violation was reported (ISMP, 2005).

## Assessing competency: The controversy

Clinical competence is an evasive term and the discussions in the literature provide a wide range of definitions. Benner’s (1982) work in distinguishing different levels of expertise emphasizes that competence in nursing reflects the practice in the “real world”. Alspach (1992) took this further, noting that competence describes a person’s potential capability to function in a particular situation and competency focuses on a person’s actual performance in that situation. The insight expressed in this work can be applied to assessing how well the nurse applies new learning in the critical care setting as the patient’s condition rapidly changes.

Paliadelis and Cruickshank (2003) explored the role that expert knowledge plays in assessment of clinical competence, noting that participants in the study used a variety of terms to describe this knowledge: intuition, instinct, gut feeling and “just knowing”. This study also echoes Benner’s theory of acquisition of knowledge through stages from novice to expert, and urges further research into the link between expert knowledge and expert assessment of knowledge. The National Summit on the Future of Education and Practice in Health Management and Policy in 2001 called for documentation of the learning outcomes for continuing education. In response, one document looked at a number of competency-based educational programming initiatives (Calhoun et al., 2004). The use of context-dependent test items is a tool offered by Wayne State University. (Oermann, Truesdell, & Kiolkowski, 2000). The Certification Board of Perioperative Nursing recognizes that assessing competency is not a simple task and advocates for a variety of professional activities to learn and maintain competence (O’Neale & Kurtz, 2001). The College of Nurses of Ontario has been recognized for the acceptance of their Quality Assurance Reflective Practice program. This formal process was created to help nurses maintain their competence in today’s rapidly changing environment (CNO, 2004). Canadian nursing regulatory authorities “view competence as the rehearsal of the ethical attributes consonant with the professional role, as opposed to the enactment of skill conduct” (Nelson & Purkis, 2004, p. 247). The contention is that the reflective component radically fails as a tool for auditing quality and assessing competency.

To give nurses structure to reflective practice and to standardize clinical skills, most critical care units rely on protocols, checklists and standards to guide orientation and ongoing, periodic assessment of competency. The controversy of identifying the best practices for competency assessment remains to be clarified. “Researchers who study the relationships between human factors and human error acknowledge that the last failure in a system is usually that of a human mistake occurring in the automatic or problem-solving mode” (Cohen, 2003, p.118). Cohen advocates that many taxonomy measurement methods will only preserve the punitive status quo culture of blame, shame and train; a culture that places patient safety in jeopardy.

## Support competency, focus on human factors to improve the medication system

ISMP Canada advocates focusing on activities to improve the medication delivery system. Any educational sessions for new drugs and protocols or findings from error review are offered to all staff and are not directed at a single person involved in an error.

To help avoid the initial reaction of questioning an individual's competency, the accompanying diagram, adapted from Reason's (1990) work (See Figure One), is a tool to use as a framework guiding the analysis of intent with medication errors.

Until all these factors are addressed through budgeting for technology, which will be a valuable adjunct to error prevention, we need to build redundancies into the current systems (Wisconsin Patient Safety Institute, 2002). The document offers practice guidelines for administration such as: pharmacy review and approve orders, nurses reconcile the medication order against the MAR, patient identity and medication is verified and double-checked (e.g. wrist band to MAR),

medication name and indication are verified with the patient and special instructions are explained, documentation is completed immediately following medication administration.

Given the imperfect work environments and the rapidity of decision-making needed in the clinical setting, the most competent nurse is at risk of being involved in a medication error. If the majority of the contributing factors of errors fall into the category of lapse or mistaken action, actions and

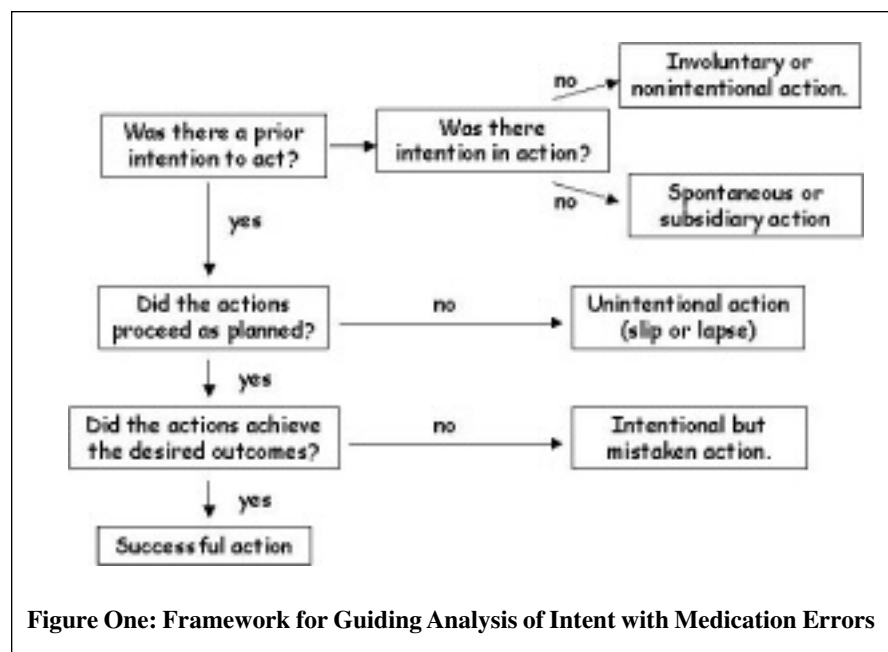


Figure One: Framework for Guiding Analysis of Intent with Medication Errors

support to cope with lapses and cues to prevent mistakes have the widest scope to increase safety for all staff handling medications. Applying human factor principles such as adding redundancies, well-labelled reminders, forcing functions and standardization of processes are a few examples of how to effectively build in system safety for all nurses and patients and lower the threshold of the probability of error. Education and training has merit, but only if used as supportive action to the higher leverage actions.

Researchers in patient safety from Wisconsin noted that the majority of medication errors can be attributed to the following factors: lack of knowledge of the drug, lack of knowledge of the patient, deviations from procedures, slips or lapses in memory, and transcription errors. State-wide guidelines were developed with these triggers in mind (WPSI, 2002) (See General Principles, Table One). The College of Nurses of Ontario offers a comprehensive document to guide medication administration standards, supported by local workshops to review and discuss ideas for practical application of the standard (CNO, 2004).

Using the standards, evidence-based system improvements, and human factors principles are where critical care nursing administrators need to concentrate collaborative efforts when assessing medication errors. Continued dialogue and research is needed to identify accurate and consistent methods of assessing competency related to medication administration. Training and case scenario review to address knowledge gaps and to increase the level of competency must be shared with the entire critical care team and not used as part of an individual nurses' performance review.


## Recommendations

1. Use Root Cause Analysis approach to review system processes when sentinel events occur and where trends for error-prone situations have been identified.
2. Initiate system-wide changes that promote safety, based on evidence.
3. Design changes based on Human Factors Theory principles: simplify key processes, standardize work processes, improve verbal communication, create a learning environment, promote effective team functioning, anticipate that humans make errors, design equipment and systems to fit users' capabilities and limitations.
4. Introduce clear cues and reminders into the system to reduce the need to rely on memory.
5. Initiate independent double-check processes for high-alert medications (ISMP Canada, 2005).

**Table One:**  
**Best demonstrated practices**

**General principles:**

- All health care professionals involved in medication administration receive periodic education regarding new medications or revised drug dosing
- Patients and caregivers are provided with written medication information
- Medication administration times are standardized

6. Design education and training sessions for all staff to address issues of lack of knowledge, lack of familiarity and to introduce new products or processes.
7. Encourage voluntary reporting of errors and "good catches" and use trends to help identify error-prone problem areas, and then feed back reports to staff.
8. Do not use voluntary error reports in disciplinary steps or performance reviews. Ensure there are clearly established human resources routes to be used only for the rare incidents of intentional wrongdoing. 

## References

Alspsach, J.G. (1992). Concern and confusion over competence. **Critical Care Nurse**, **12**, 9–11.

Baker, G.R., Norton, P.G., Flintoft, V., Balis, R., Brown, A., Cox, J., et al. (2004). The Canadian adverse event study: The incidence of adverse events among hospitalized patients in Canada. **Canadian Medical Association Journal**, **170**, 1678-1686.

Benner, P. (1982). Issues in competency-based testing. **Nursing Outlook**, **30**, 303–309.

Calhoun, J.G., Vincent, E.T., Baker, G.R., Butler, P.W., Sinioris, M.E., & Chen, S.L. (2004). Competency identification and modeling in healthcare leadership. **Journal of Health Administration Education**, **21**, 419-440.

Cohen, H. (2003). Error in nursing. **Journal of Nursing Administration**, **33**, 118-119.

College of Nurses of Ontario. (2004). **The standards of care**. Toronto: Author.

Institute for Safe Medication Practices. (2005). **Practitioners anticipate action from licensing regulators. ISMP Medication Safety Alert!** Retrieved May 2005, from <http://www.ismp.org/MSAarticles/20050519/htm>

Institute for Safe Medication Practices Canada. (2005). Lowering the risk of medication errors: Independent double checks. **ISMP Canada Safety Bulletin**, **5**(1), 1-2.

Leape, L.L. (2005). **Host commentary**. Retrieved Sept 16, 2005, from <http://www.ihi.org/ihi>

Nelson, S., & Purkis, M.E. (2004). Mandatory reflection: The Canadian reconstitution of the competent nurse. **Nursing Inquiry**, **11**, 247-257.

Oermann, M., Truesdell, S., & Kiolkowski, L. (2000). Strategy to assess, develop and evaluate critical thinking. **Journal Continuing Education in Nursing**, **31**, 155-160.

O'Neale, M., & Kurtz, S. (2001). Certification: Perspectives on competency assurance. **Seminars on Perioperative Nursing**, **10**(2), 88-92.

Paliadelis, P., & Cruickshank, M.T. (2003). An exploration of the role that expert knowledge plays in the assessment of undergraduate clinical competence: Registered nurse's experiences. **The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy**, **191**, <http://rrh.deakin.edu.au>

Reason, J. (1990). Human error. **British Medical Journal**, **320**, 768-770.

Squires, M., Biesiada, B., Fanizza, R., Stationwala, A., MacLean, J., & Strapp A.M. (2005). New approaches to improving patient safety: Strategy, technology and funding. **Health Care Quarterly** **8**(3), 2-10.

Wisconsin Patient Safety Institute. (2002). Maximizing patient safety in medication use process. **Practice guidelines and best demonstrated practices**. Retrieved August 2005, from [www.wpsi.org](http://www.wpsi.org)