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Training Residents for Safety

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Medical errors related to residents are well-documented. Focusing the attention of physicians-in-training towards patient safety represents an opportunity for improving safety in the ICU. In this article, Dr MariamAl-Ansari summarises the key educational issues for promoting the contribution of residents to patient safety drawn from the work of John Heffner and colleagues.

Residents and Patient Safety

Patient safety has emerged as a compelling issue in healthcare. Intensive care is one of the largest, most expensive, and complex components of healthcare, accounting for approximately 30% of acute care costs (Pronovost 2002). Complex systems – of which ICUs are an example – are breeding grounds for errors, because interdependent components interact in unexpected ways. Errors resulting in adverse events are common in ICUs (Pronovost et al. 2004) and adverse events related to resident errors are well-documented (Wu et al. 1991). Focusing the attention of physicians-in-training towards patient safety represents a major opportunity for improving the safety of care in the ICU.

Little discussion has emerged, however, regarding how physicians-in-training can integrate their work and learning into these new patient safety initiatives. This observation has stimulated educators to call for dramatic changes in undergraduate medical education to incorporate elements of patient safety (Rosebraugh et al. 2002). James Reason (1995) defined seven broad categories of conditions that promote medical errors: high workload, inadequate knowledge, ability or experience, poor interface design, inadequate supervision or instruction, stressful environment, mental state (e.g. fatigue, boredom) and change. Residents who enter an ICU rotation face most of these error-promoting conditions. ICU is an inherently hazardous environment in which human error is inescapable.

Goals in training should therefore focus on how to improve systems of care and how to manage the consequences of errors if they occur. John Heffner and colleagues have written extensively on the issue of residents in training in the ICU (2005), and I summarize here the key educational issues they raise for promoting the contribution of residents to patient safety.

New Teaching Methodologies

Traditional didactic courses and methods of teaching are limited in their effectiveness compared with newer approaches, such as problem-based learning, interactive forms of education, small group discussion and simulation with videotape feedback during residency training. The best predictor of performance is practice. This underpins the new vision of medical education with the adoption of simulation. Simulation allows trainees to learn all the skills required in a risk-free environment. A broad array of simulation models should be incorporated into the resident patient safety curriculum to ensure competency in a variety of cognitive and procedural subjects. These new techniques promote greater understanding of patient safety and successful change in clinical performance (see also Gaba et al. in this issue of **ICU Management**).

Resident Orientation to the ICU

It is no longer acceptable to have an increase in adverse events with the induction of new residents into an ICU. More errors occur in new work environment, which implies that ICU orientation is an essential element of patient safety. Detailed orientations must include training in the processes and procedures of the ICU, an introduction to key staff, a copy of relevant protocols and guidelines, and a discussion of the duties of the rotation and degree of responsibility. Clear instructions are essential on who to call if in doubt, especially for support outside normal working hours.

Resident Supervision

During the training, a call for assistance is often interpreted as a sign of weakness. This promotes reluctance of residents to involve senior staff in

care decisions after hours. An appropriate safeguard to overcome this problem is to encourage nurses and other caregivers to activate their chain of command when they note resident deviation from standard practices. Additionally, the Accreditation Council of Graduate Medical Education (ACGME) now recommends that the responsibilities of the faculty be extended to monitor residents for signs of fatigue or stress. Supervision is an essential requirement for promoting patient safety in the ICU and resident well-being. Levels of supervision can be graduated appropriately with trainees' progress.

Team Building

Teamwork is especially important in the ICU. The hierarchical model of patient care wherein the physician prefers to be preeminent on the healthcare team, does not promote optimal patient care and safety. Team building is assisted by interdisciplinary training, which rarely occurs in resident level education, despite having been shown to improve patient care. An ICU safety curriculum should provide knowledge on how to work effectively as part of a team in the dynamic environment of the ICU, where the common goal in the team is patient safety and optimal outcome.

Information Technology

Residents face multiple distractions that interfere with their provision of quality ICU care. In noncomputerized ICUs, for example, they often divert time from patient care to find charts and information. Information technology in the ICU has a proven effect on the physician performance, with reduction in the frequency of errors and associated adverse events, and a decrease in patient mortality (Dimick 2005). Physicians in training should have a thorough knowledge of applications and the value of new information technologies towards improving patient safety.

Error and Adverse Event Reporting

Recognizing and reporting medical errors and adverse events represents a critical opportunity for residents' learning. This positive response to medical errors is likely to promote residents' willingness to report errors when they occur. Confidential interviews can facilitate the reporting of errors by residents who are rotating on clinical services.

Medico-Legal Education and Disclosure

Residents demonstrate little understanding of how to disclose adverse events and errors (Lester and Tritter 2001; Pilpel et al. 1998). 76% of residents reported that they had never disclosed a serious error to a patient (Wu et al. 1991). A patient safety curriculum should teach the resident the importance of full acceptance of responsibility for errors. Open disclosure by communicating adverse events in an honest, open, and empathetic manner is likely to decrease medico legal risk (Mazor et al. 2004). Residents should be taught to provide patients and families with statements explaining that an error or adverse event has occurred, a description of the nature of the event, why it occurred, how recurrences will be prevented and an apology.

Resident Support After Errors

Physicians are often the second victim of medical errors. Contributing to adverse patient events triggers anger and self blame and sometimes the temptation for intellectual dishonesty by not disclosing errors. Blame has been the traditional response to errors in recent years and this philosophy needs to be eliminated, a point to be emphasized in the patient safety curriculum. As a core component, curricula need to support the emotional needs of the resident, and educate on the real sources of errors, which are usually to be found in faulty systems.

Clinical Auditing

Analysis of adverse events is an essential component of care improvement. In these analyses, the role of the individual and underlying system defects should be correctly emphasized to improve care, and opportunities used for teaching residents. Such analyses provide valuable opportunities for residents' education, for gaining clinical skills and promoting individual and organizational performance improvement. Trainees in the ICU should therefore participate in clinical audits and mishap analyses.

Quality Improvement Methodology

Curricula should increase the awareness of physicians in training about quality improvement methodologies. Participation in at least one ICU quality improvement project should be a requisite of training for critical care fellows. A patient safety curriculum teaches the residents and fellows in the critical training program the nature of healthcare systems and grounds them in quality improvement and total quality management methodologies.

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