



Medical Matters

DO NO HARM¹

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Calling for a redesign of healthcare delivery to reduce medical errors and adverse events, the Institute of Medicine (IOM) published its report *To Err is Human: Building a Safer Health System* (Kohn, Corrigan, & Donaldson, 1999). Researchers reviewed studies that showed deaths from reported preventable medical errors ranged from 44,000 to 98,000 people per year (Brennan et al., 1991; Leape et al., 2010; Thomas et al., 2000). According to the IOM report, these figures exceeded the number of deaths attributed to motor vehicle accidents, breast cancer or AIDS. The economic costs were equally staggering and estimated to be between 17 and 29 billion dollars per year due to increased costs of additional care, lost income or disability (Kohn et al., 1999; Van Den Bos et al., 2011). Poorly designed patient care processes not underperforming individuals were identified by IOM as the major cause of adverse events.

To Err is Human remains a clarion call to health care systems to redesign systems of care to prevent medical errors and adverse events from occurring. In order to identify methods and processes to reduce preventable medical error, health

¹The logo for the *Oakland Journal's* "Medical Matters" was created by Kathleen Doyle, Instructional Designer for The Oakland University-William Beaumont School of Medicine.

care systems have looked to systems engineering, quality improvement in manufacturing, and methods of risk reduction in industries such as aviation and nuclear power. Surgical checklists and “time-out” before surgery to check the facts of the case, multiple forms of patient identification, medication review and reconciliation, and electronic medical records are a few examples of these system processes designed to prevent adverse events. National organizations and accrediting bodies, such as Institutes of Healthcare Improvement, Agency for Healthcare Research and Quality (AHRQ), National Patient Safety Foundation, Joint Commission, and others have provided resources and tools to help healthcare systems reduce the number of adverse events and preventable medical errors. Since the publication of *To Err is Human*, healthcare systems are being held more accountable for the delivery of safe patient care. Crucially, medical education, at the undergraduate (medical school) and graduate (residency) levels will need to be restructured to provide physicians with the knowledge, skills, and attitudes to actively contribute to this change.

Healthcare systems have demonstrated improvement in the quality of care since the IOM report was released. It has become clear, however, in order to sustain forward momentum that curricular innovation at the medical school and residency level are imperative. Current medical school and residency curricula may not provide robust or innovative training in quality and safety, leaving medical students or residents, once they have completed training, lacking some of the knowledge, skills, and attitudes needed to provide excellent patient care.

A national campaign named “Better Practices for Better Care” launched by the Association of American Medical Colleges (AAMC) names five main goals to deliver better patient care:

- Teach quality and patient safety to the next generation of doctors
- Ensure safer surgery through use of surgical checklists

- Reduce infections from central lines using proven protocols
- Reduce hospital readmissions for high-risk patients
- Research, evaluate, and share new and improved practices. (Association of American Medical Colleges)

To achieve these goals, Oakland University William Beaumont Hospital School of Medicine (OUWB) and Beaumont Hospital Health System have joined the AAMC campaign. The outcome of such an initiative will be to train future physicians to become active leaders in the improvement of the healthcare systems and in the provision of safe and equitable patient care.

In addition to traditional medical schools' need for more innovative training to achieve better patient care, most traditional medical school curricula have only sparse instruction on improving quality and safety; such instruction is often limited primarily to a few didactic lectures. The Lucien Leape Institute at the National Patient Safety Foundation, a think tank of quality and safety experts, convened a roundtable in 2010 of medical education experts to identify key curricular components for medical school curriculum. Some of their recommendations included:

1. An admissions process which selects for attributes that reflect professionalism, interpersonal and communication skills, interest in patient safety, and an ability to work in a team.
2. A longitudinal structured curriculum that begins in the first year of medical school that focuses on the following key areas: foundational knowledge in quality improvement, knowledge and skills in the cause of errors, care systems re-design, and team training. The outcome of such a curriculum is to prepare medical students for an increasing leadership role in quality and safety as they transition to their residency programs and beyond.
3. Faculty development focused on helping faculty acquire knowledge and skills in teaching quality

and safety knowledge and skills to students.
(Leape et al., 2010)

OUWB School of Medicine is currently addressing these recommendations in innovative ways through an admission process that uses holistic reviews of the student's application, based upon evidence of academic preparation, dedication to serving others, ability to work in teams, competence for delivering quality care in a global society, and an understanding of the attributes of a physician in healthcare today. OUWB is positioned to be a national leader in implementing the holistic review process for medical students. This process directly addresses the first recommendation from the Lucien Leape Institute.

Furthermore, OUWB has developed a collaborative partnership with William Beaumont Health System Quality and Patient Safety, to develop a longitudinal medical school curriculum to introduce basic knowledge in quality improvement, identification of the causes of errors, the process by which care re-design occurs and team training. Experiential teaching strategies, such as simulation, team based learning and reflective narrative, will be used to help students apply their knowledge to patient care. Medical students might also choose a Quality and Safety focus as part of their Capstone academic experience. Opportunities for faculty development through the OUWB Advance Faculty Development Series are also being explored so that faculty have the necessary skills to teach quality and safety to both medical students and residents.

There are rich opportunities to develop nationally recognized innovative curricula in the area of quality and safety that will impact patient care and develop future healthcare leaders. OUWB and William Beaumont Hospital System have many of the components in place to develop and implement such an initiative. As we open the new medical school, we are looking forward to implementing our vision of training excellent compassionate physicians and improving patient care.

NOTE

¹ This phrase comes from the Latin, *Primum non nocere*, usually attributed to Hippocrates. It is “an axiom central to clinical pharmacology and to the education of medical and graduate students.” For more on the origins of this phrase, see C.M. Smith, “Origins and Uses of Primum Non Nocere:—Above All, Do No Harm!”. *Journal Of Clinical Pharmacology* 45:4 (2005): 371–377. Available at <<http://www.ncbi.nlm.nih.gov/pubmed/15778417>>.

REFERENCES

Association of American Medical Colleges (AAMC). *Better practices for better care*. Retrieved June 5, 2011, from <https://www.aamc.org/initiatives/>

Brennan, T., Leape, L., Laird N., Herbert, L., Localio, A., Lawthers, A., . . . Hiatt H. (1991). Incidence of adverse events and negligence in hospitalized patients. results of the harvard medical practice study I. *New England Journal of Medicine*, 7(324), 370–376.

Kohn, L., Corrigan, J., & Donaldson, M. (1999). *To err is human*. Washington, DC: National Academy Press.

Leape, L., Berwick, D., Clancy, C., Conway, J., Gluck, P., Guest, J., . . . Members of the Roundtable on Reforming Medical Education. (2010). *Unmet needs: Teaching physicians to provide safer care*. National Patient Safety Foundation.

Thomas, E., Studdert, D., Burstin, H., Oray, E., Zeena, T., Williams, E., . . . Brennan, T. (2000). Incidence and types of adverse events and negligent care in Utah and Colorado. *Medical Care*, 38(3), 261–71.

Van Den Bos, J., Rustagi, K., Gray, T., Halford, M., Ziemkiewicz, E., & Shreve, J. (2011). The \$17.1 billion problem: THE annual cost of measurable medical errors. *Health Affairs*, 30(4), 596–603.