Physicians who practice evidence-based medicine learn from controlled clinical studies to make better clinical decisions. By examining the collective experiences of our peers and predecessors documented through research, we use history to our advantage—a particularly valuable lesson for the medical students and residents trained at the Medical College of Wisconsin.

Institutionally, the College underscores the merit of evidence-based medicine through a commitment to our Center for Patient Care and Outcomes Research. Directed by Ann B. Nattinger, MD, MPH, professor and chief of General Internal Medicine, the Center is a leading source of clinical information in this area.

This serves as a great example to students as they are first introduced to the basics of evidence-based medicine in their M-1 year. The initial emphasis is placed on how to develop questions that can be answered through a search of the medical literature. Students form these questions upon review of sample clinical cases in preparation for selecting the best reference to answer their question.

Much of their searching is done using tools managed by the Medical College of Wisconsin Libraries, which offers more than 1800 electronic medical and scientific journals and more than 50 biomedical databases. Students report on the results of their search and appraise whether the evidence they found appropriately answered their clinical question.

Training in evidence-based medicine is reinforced in the students’ second and third years through numerous activities, particularly an intersession for M-3s emphasizing how to find information that is high quality and readily accessible. In the intersession, students search for literature applicable to 10 cases, which they later review to determine which databases yielded the most germane evidence and why.

The goal is for our students to be more savvy in understanding the quality of the information and the differences between the sources. These are lifelong skills further developed through intensive evidence-based medicine training in the College’s internal medicine, pediatrics and family medicine clerkships. Students and residents are trained to critically evaluate medical literature so when they enter practice they can determine a paper’s merits or identify its flaws.

By referencing the current best evidence, physicians can reduce the variation in care, thus making sound decisions for individual patients based on a combination of their own expertise and the outcomes reported by their peers. This fundamental concept drives some of the efforts undertaken by the Medical College and its hospital partners to improve the quality of patient care.

John A. Weigelt, MD, professor of Surgery, chief of Trauma and Critical Care Surgery, and associate dean of Clinical Affairs, was recently named the first joint Medical College of Wisconsin and Froedtert Hospital Medical Director of Clinical Quality.

The quality initiatives Dr. Weigelt has adopted for the program include all six interventions identified by the Institute for Healthcare Improvement’s 100,000 Lives Campaign. Evidence-based medicine data supports each of these interventions as capable of altering patient outcome, morbidity, and mortality.

As a participant in the 100,000 Lives Campaign, the College has the following goals to improve clinical quality:

- Prevent deaths in acutely ill patients outside the intensive care unit who show signs of deterioration by implementing rapid response teams who respond prior to cardiac arrest or other adverse event.
- Prevent deaths among patients hospitalized for acute myocardial infarction by ensuring the reliable delivery of evidence-based care.
- Prevent adverse drug events by implementing medication reconciliation.
• Prevent central venous catheter-related bloodstream infection and deaths by implementing a validated set of interventions in all patients requiring a central line.

• Prevent surgical site infection and deaths by reliably implementing a validated set of interventions in all surgical patients.

• Prevent ventilator-associated pneumonia and deaths from this and other complications in patients on ventilators by reliably implementing a validated set of interventions.

By applying the knowledge acquired from outcomes research in these areas, we can ensure our patients receive the best possible care.

Ramesh Sachdeva, MD, PhD, MBA, associate professor of Pediatric Critical Care, is vice president of Quality and Outcomes at Children’s Hospital of Wisconsin. Under his leadership, Children’s Hospital replaced its traditional quality improvement model with the Council for Quality, based on the Institute of Medicine’s report, Crossing the Quality Chasm. The Council monitors and evaluates clinical performance at Children’s Hospital.

A focused attempt is made to identify, incorporate, and implement evidence-based practices within Children’s Hospital’s clinical program. These practices are identified based on literature reviews, expert input, and discussions with our medical leaders. Their successful adoption can be attributed to the following three factors: (1) The quality indicators, including evidence-based practices, are identified using a scientific approach and in discussion with the clinical leadership; (2) The measurement of quality indicators and the adoption of the evidence-based practices are tailored to our clinical programs, which increases the specificity and acceptance of recommendations; (3) By integrating this process with the overall process of monitoring the clinical programs through the Council for Quality, regular assessment and feedback can successfully be provided to the clinical teams and programs regarding the success of the evidence-based practice initiatives, which serves as a catalyst for further success.

In addition to employing evidence-based medicine, the Medical College contributes to improving the evidence available by conducting meaningful studies through the Center for Patient Care and Outcomes Research. For example, Dr Nattinger is among a number of faculty members collaborating with Timothy L. Smith, MD, MPH, professor of Otolaryngology and Communications Sciences and chief of Rhinology and Sinus Surgery.

Doctor Smith is principal investigator of a National Institute of Deafness and Other Communication Disorders grant for the study of clinical outcomes in the surgical management of chronic sinusitis. This is the first outcomes study of its kind funded by the National Institutes of Health. The three-site study examines quality of life and olfactory function, and includes radiographic and endoscopic evaluation of patients with chronic rhinosinusitis before and after treatment.

Such original outcomes research projects have factored into the dramatic growth of information available to today’s physicians. The volume of evidence-based medicine resources accessible via the Internet also gives physicians a convenient and increasingly comprehensive pool of data from which to draw.

As part of our commitment as a leader in academic medicine, the Medical College of Wisconsin is applying evidence-based medicine, teaching its effective use, and expanding its boundaries so the clinical outcomes of patients may perpetually improve.
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