

Analyzing the Challenges of Problem-Based Learning

Medical schools all over the world now employ problem-based learning (PBL). PBL is a self-directed process implying that learners play an active role in planning, monitoring, and evaluating the learning process. They should be stimulated to become aware of their prior knowledge and be prepared to become lifelong learners who are able to acquire new knowledge and skills rapidly.

This should be a collaborative process where participants have a common goal, share responsibilities, and are mutually dependent because they need to reach agreement through interaction. Problems in PBL stimulate students to actively construct new knowledge based on their previous knowledge. Teachers in PBL are facilitators who stimulate students to be self-directed learners. As facilitators, they should not transmit their expert knowledge, but should instead be able to probe students so that PBL is a self-directed process.

PBL is typically a small-group process in which students work together to become better collaborators. It is also designed to stimulate them towards interactions that have a positive effect on learning. Problems used in the PBL process should be realistic, making more use of real patients. In addition, facilitators should not be too dominant or too passive. Both of these types of tutors hinder the learning process. Tutors should be able to deal with problems associated with group dynamics.

It is recommended that problems that are used be more complex and ill structured and that there be constructive friction between student and tutor guidance. That mixture, it is concluded, will enhance student learning as well as the collaborative learning process. Research is suggested that is focused on obtaining a better understanding of how PBL does or does not work and under what circumstances.

(Dolmans DHJM, De Grave W, Wolfhagen AP, and Cees PM Van Der Vleuten. "Problem-Based Learning: Future Challenges for Educational Practice and Research." Medical Education. 39: 732-741; 2005.)

Getting a Grip on Genetics in Medical Education

There is a growing relevance of medical genetics to primary care. However, primary care providers have limited genetics knowledge as a result of the rapid advances in this area as well because of the limitations in genetics education in medical school curricula. This lack includes knowledge and skills in evaluating patient family histories for possible genetics conditions, missed opportunities for genetic diagnoses, and few referrals to genetic counseling services.

While schools seem to adequately cover the knowledge of genetic transmission, molecular biology, and population genetics, only a small number integrate genetics into clinical training outside of the pediatrics clerkship. In addition, it is not clear whether students learn the need for informed consent, how to obtain it, and how to assess and evaluate scientific genetic literature.

The Association of American Medical Colleges recommends using standardized patients, case presentations, and integrating basic science and clinical medicine into genetics education in order to achieve the goal of having a culture in which genetics is intertwined into wards and clinics. It is through such efforts that it is believed students will obtain core competencies in genetics and will be able to include such knowledge and skills in medical practice.

(Thurston CV, Wales PS, Bell MA, Torbeck L, and Brkaw JJ. "The Current Status of Medical Genetics Instruction in U.S. and Canadian Medical Schools." Academic Medicine. 82(5): 441-445; 2007.)



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Family-Centered Bedside Rounds Prove Popular



A study in the Department of General and Community Pediatrics at the Cincinnati Children's Hospital Medical Center fostered the implementation a new process in a single acute care unit of a teaching hospital that employs a multidisciplinary team that allows families to decide if they wanted to be part of attending-physician rounds.

The Robert Wood Johnson-funded project concluded that family involvement improved communication, shared decision-making, and provided new learning experiences for students and residents. The process has since spread throughout the institution. Components of the process include the following:

- The family decides how rounds are to be conducted (85 percent choose to be actively involved).
- Families decide whether they should be awakened for rounds.
- Families are introduced so that they feel they are part of the process.
- Time is provided for family involvement.
- An intern or student clarifies purposes of the rounds and welcomes family involvement.
- The intern summarizes medical status and treatment in lay language. The family participates in the plan of the day and discharge goals.
- Nurses and ancillary staff are present.
- Families participate in decisions made on rounds.
- Teaching attendings assess intern's understanding and family and staff level of comfort.
- Teachers model appropriate behavior for residents and students.
- Senior residents and teaching attendings ask family for permission to conduct additional teaching in the room.

Initially, residents and students thought the new process would compromise teaching, but they now feel this is not so in that they are learning what they could not learn during a lecture or conference. There also was the concern about time since this new process takes about 20 percent longer. However, it appears that while that is true, it saves additional time later in the day. Finally, the issue of confidentiality was a concern. This was not a problem in private rooms but in shared rooms. To address this, families choose the degree to which they would be involved.

(Muething SE, Uma RK, Schoettker PJ, Gonzalez del Rey J, and DeWitt TG. Pediatrics. 19(4): 829-832; 2007.)

"Medical Education Highlights for Primary Health Care"

An Insightful History of the White Coat



Prior to the late 19th century, physicians wore black rather than a white coat since patient interactions were considered to be formal matters. However, even today, not all doctors wear white coats, especially pediatricians and psychiatrists. In fact, in England and Denmark, patients do not expect their physicians to wear white, but those in Sweden, Finland, and Norway do. Older patients in the United States prefer their physicians to wear white while those who are younger do not.

In Latin, the word candidus, from which candor or truth is derived, means white. In addition, since in the 19th century visiting a physician was usually

a last resort and frequently a task carried out before death, this also may explain the black garb. At the end of the 19th century and beginning of the early 20th century as medicine became more scientific, pureness and whiteness became more identified with physicians, nurses, and even the habit of nuns who served as nurses. As a result, the white coat has become one of the symbols of medicine. However, psychiatrists and pediatricians chose not to use this symbol to allay some of the anxiety in their patients.

There are many patients who look at the white coat as a cloak of compassion. And then there are those patients who have an atypical elevated blood pressure as having the “white coat syndrome” when seeing their physician in this typical garb. Today’s medical student is welcomed to a career in medicine through the White Coat Ceremony created by Arnold P. Gold, M.D., who believed that it would provide them with a powerful symbol of compassion and honor and a standard against which they can measure every act of care to the patients who will trust them.

(Hochberg MS. “History of Medicine: The Doctor’s White Coat - An Historical Perspective.” Virtual Mentor: American Medical Association Journal of Ethics. 9: 310-314; 2007.)

Will There Be Enough Applicants to Medical Schools?

The Association of American Medical Colleges (AAMC) completed a study of the number of applicants expected to apply to medical school during the next 10 years after the June 2006 recommendation by the AAMC to increase medical school enrollment by 30 percent. After the number of applicants peaked at 31,903 in 1994, it dropped to 24,886 in 2002. However, since that time, the applicant pool began to rise for five straight years. It is also projected that the number of baccalaureate degrees will keep rising through 2015-2016 by 26 percent more than 2002-2003.

The AAMC assumes there will be a stable percentage of new graduates applying to medical school based on average data for the last 10 years. The organization conservatively predicts that two percent of those who receive a B.A. or B.S. degree will become first-time applicants. In addition, media attention on medical school expansion and physician shortages should also yield some applicants. By 2015, the AAMC predicts in excess of 34,000 first-time applicants. Even with the future increases in class size of 30 percent, the minimum applicant-to-matriculant ratio will be achieved in 2010 that is comparable to past admissions.

(Garrison G, Matthew D, Jones RF. “Future Medical School Applicants, Part I: Overall Trends.” Analysis in Brief: AAMC. 7 (3); 2007.)

Assessing Medical Education Affordability Legislation

Today, the average medical school graduate, including those in public and private institutions, accumulates a debt burden that exceeds \$130,000. However, some future physicians are eligible for a hardship deferment if they meet specific debt-to-income requirements. If that is granted, during the period of that deferment, the new graduates are not required to make payments on their federal education debt. However, that deferment is only for three years, and many graduate medical education programs may extend for significantly more time. In these cases, those in such graduate medical education programs may be required to either begin repaying their loans or to put their loans into forbearance—an expensive option since interest would then begin to accrue.

U.S. Senator Christopher Dodd has put forth legislation entitled the Medical Affordability Act. This would allow future physicians to defer repayment of their student loans throughout the duration of their training so they could postpone these significant additional expenses without worrying as much about how they will be able to repay their debt. This legislation would apply to loan deferment for the duration of residencies, internships, and fellowships in medicine and dentistry.

(Kirch D, president, Association of American Medical Colleges. Letter of March 29, 2007.)

Examining the Future of Medical Licensing



State-based medical licensure was established in 1912 by the medical practice act in West Virginia. Physicians then began practice and continued practice throughout their career in one community for their entire professional life. Almost all physicians were general practitioners, and society was not very mobile. Little has changed in that licensing system except for the establishment of a uniform assessment for licensure through the introduction of the USMLE and COMLEX-USA exams.

In addition, there are 41 states requiring continuing education to maintain a medical license but 9 that do not. All those granted a license have the privilege of practicing the full scope of medicine. However, there have been many changes affecting medical practice, including an extremely mobile society, physicians who have licenses in more than one state resulting in practice in multiple states, and technology that can bring a doctor to the patient electronically (e.g., teleradiology).

Some argue that state-based licensure has outlived its usefulness and that

physicians should be able to practice in all states with a medical license. An interest in a national license is argued as a result of the growth of technology and the need for emergency preparedness. The use of modern radiology and other imaging technology as well as the transport of specimens across state boundaries may result in interpretations and diagnoses that can be made in distant locations.

Similarly, patients with skin lesions and psychiatric disease can be diagnosed through telemedicine at distant sites as well as the case for psychiatric disease when they are in locations where the physician is not licensed. There is also a need in the current world for physicians to be mobilized to various parts of the country in times of emergency such as terrorist attacks, pandemics, and weather-related catastrophes, which are situations that have raised the awareness of the restrictions of a state-based licensure system.

Physicians in the 21st century are neither expected nor are they capable of practicing all disciplines of medicine. However, their license puts no restrictions on what an individual physician may practice. Furthermore,

when physicians come up for licensure, they usually have narrowed their scope of what they can do competently. As a result, licensure for a general undifferentiated medical practice (GUMP) has come under question.

Two national summits on physician self-regulation were held, and the consensus was that a national licensure system be created in which states would recognize the licensure systems of other states (i.e., portability) but not a federally run licensing system. Discipline would best be handled locally, and there would be a nationally recognized medical license with registration in the states where one would want to practice.

However, the question has been raised as to whether it makes sense to require one to demonstrate—on renewal of a license—competency resulting in an unrestricted medical license—or should there be licensure by specialty? An example is given in that an orthopedic surgeon who limits practice to hand surgery might have a license and an assessment of competency solely related to hand surgery. The uncertainty of the future of the medical license was concluded.

The basic question is whether a license should continue to be given that allows an individual to practice the full scope of medicine. Also, should licensure be linked to board certification and even to the scope of an individual’s practice? Finally, can systems be developed allowing medical license portability nationally and even internationally?

(Thompson J, president and chief executive officer, Federation of State Medical Boards. “The Future of Medical Licensure in the United States.” Academic Medicine. 81(12) Supplement: S36-39; 2006.)