

# Tomorrow's doctors need mentoring as well as technology

If we fail to recruit mentors and pay them properly, technology will become the principal tool of tomorrow's doctors, and we will all suffer the consequences.

**ABSTRACT:** In training to become a doctor, a student must first acquire knowledge of bodily functions and an understanding of the diseases that disrupt them, and then learn to apply this knowledge to the care of patients. Basic information is obtained from texts and tutors, and now increasingly from searches of literature using computer technology. Applying this knowledge to the care of patients is learned from physician mentors at the bedside, in clinics, and in the emergency and operating rooms. The two processes of training—acquiring information and learning to apply it—overlap and at times run concurrently. Several new technologies can aid both, but in the end trainees only become doctors under the guidance of physician mentors. The new technologies, valuable though they are, must never displace the mentoring process.

**W**hen fetal heart monitoring was in its infancy, everyone involved in obstetrical care was excited by the potential of this technology to improve fetal outcomes. Numerous monographs on the subject were produced and distributed; numerous tutorials were conducted to bring all clinicians quickly up to speed in the use of these wonderful machines. As we residents enthusiastically studied the newest machine, with its glossy brochure showing clinicians clustered around the monitors and engrossed with the images, my program director, a pragmatic and much-loved clinician, went ballistic: “Where’s the patient?” he demanded. “Who’s with the patient?”

## The relative importance of new technology

Some physicians worry that the explosion of technology in medicine threatens to overwhelm the close relationship between doctor and patient so essential for good patient care. On the contrary, new technologies, many of which have to do with obtaining reliable information rapidly and adding precision to diagnosis, will give discerning physicians more time to spend with their patients.

In the early days of the developing technologies, including the computer and the Internet, it seemed they would provide the answers to questions involving technical and labor-intensive activities, including medical education. Certainly they have fulfilled their promise for the preclinical acquisition of basic knowledge, but from the clinical years on they are of supportive use only in training doctors. In the early years of study, the use of new teaching aids, including problem-based learning, appears at first sight to remove the emphasis from the patient, whose welfare is the sole reason for that education. But this is true only for the process of acquiring basic information; today’s medical students come into contact with patients, if only as observers in the physician’s office, from the first day they enter medical school.

## The unpredictability of medical practice

In the 18th century, Alexander Pope (1688–1744) correctly advised, “The proper study of mankind is man.” And more than 100 years later, William

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Osler (1849–1919) said, “Medicine is learned by the bedside and not in the classroom,” another truth that endures. Keeping Pope and Osler in mind, we must remember that the new teaching techniques can support but never replace bedside learning. The practice of medicine is not an exact science; there are more exceptions to the rule and unpredictable outcomes than in any other. It follows that medical education itself can never be all-encompassing in the short time available in medical school. Patients and their illnesses cannot be programmed or put easily into compartments. Outcomes are seldom certain. Because even vast amounts of learning and experience will not always reveal the myriad ways in which diseases in patients may present, learning must be lifelong—something understood by Geoffrey Chaucer (ca 1342–1400), when he referred to “The lyf so short, the craft so long to learn.” So while new technology is essential, it must never dominate. The evolving technologies have three applications: first, to deliver information to students acquiring basic knowledge of bodily functions and disease; second, to help practitioners update their knowledge; and third, to assist with diagnostic precision. These new technologies are of immense value when used correctly for teaching, diagnosis, and treatment, and will continue to be so, but we must ensure that technology remains the servant and not the master of the clinician. To rely on technology rather than thought is the lazy way out. If the patient’s best interests are to be served, physicians must remain in charge, using technology as a tool but not as the determinant of how we relate to patients. The possibility is real. There are doctors graduating from prestigious schools, though seldom in Canada, who know all the tests available for the conditions they will encounter but who are unable to take a history or carry out

a physical examination—without which the patient becomes an object for study, not a person who is sick. This is why we introduce students to patients early, so that they learn these essential skills from the start, and realize that the patient comes first and should determine the agenda.

library, on the Internet, and from each other—a valuable exercise in gathering material, which will stand them in good stead when they enter practice. At the same time, students attend lectures from experts on the subjects under review. PBL is theoretically a useful exercise but has yet to be proven better than other meth-

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**The ideal format for medical education**

1. At first the student must acquire certain basic information. The favored method is problem-based learning (PBL), in which the student is given a clinical problem that requires analysis and a search for the relevant physiology and pathology using available aids. Students are guided in this by trained supervisors, although often not a physician familiar with the field (in these times of doctor shortages there are too few practising physicians able to act as tutors). Although a clinical problem is a novelty to the starting student, it adds relevance to the basic information the course is designed to instill. From these courses, students learn to search for information in the li-

ods of acquiring the knowledge the medical student needs. As with all methods of learning, some students will find it helpful, others not.

2. Next students must spend time with patients. Students enter medical school because they wish to care for the sick and injured, and they want to see patients from the day they arrive. From these early encounters, which are concurrent with other forms of study, including PBL, students learn how to approach patients and that their first duty is to ensure no harm is done to them. They learn professionalism and how to relate to their colleagues and the profession as a whole. As they are exposed to different clinical scenarios their confidence and clinical ability increase.

3. Throughout their time on the wards and in physicians' offices, students must work with experienced mentors who are interested in their development. Whether mentors are residents or consultants, it is important that they are clinicians who are dedicated to patient care.
4. Eventually students must learn that an evidenced-based approach to medical management is valuable for clearly defined problems, but that many conditions have not been studied in randomized controlled trials and often cannot be studied in this way. The art of medicine is in knowing not only how and when to investigate and treat patients with clearly defined conditions, but also how to deal with those patients with conditions that do not fall into these categories (the "gray" areas of medicine). Defining what constitutes the art of medicine and then teaching it in an abstract way is not impossible—but it is best taught as an integral part of delivering care.
5. Finally, having acquired the necessary knowledge, students must learn how to apply it to sick and injured patients. For this we should revisit a type of learning that has been used to hand down skills for centuries.

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To implement this system as the medical school expands, we will need many more mentors than are currently being used. Since we know that potential mentors are scattered throughout the province, we must approach and re-

cruit them, decide together on the scope and content of a mentoring process, and provide whatever resources are needed for such a process. If we do not, technology will become the principal tool of tomorrow's doctors, and patients (that is, us) and their problems will be relegated to a position of limited importance.

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**Competing interests**

None declared.

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