Service and education in postgraduate medical education: striking a proper balance

Robert F. Maudsley, MD, FRCSC

The balance between service and clinical education is one of the major issues facing postgraduate medical education. Being involved in the provision of clinical services — learning by doing under supervision — is the essence of clinical education. The issue of service and clinical education has gained prominence for several reasons: the reduction in the number of postgraduate trainees resulting from the government's concern about an oversupply of physicians and the costs this generates; an increase in the volume and diversity of services in teaching hospitals; and an increasing emphasis on education in postgraduate training. Various institutions, organizations and groups, because of their special interests, contribute to the imbalance between service and education in many postgraduate medical programs.

Teaching hospitals

Services in teaching hospitals are organized and staffed according to a model of postgraduate education and numbers of trainees that existed 10 or more years ago. Community-minded hospital boards, medical schools and medical staff continue to expect more, and more sophisticated, services.

Dr. Maudsley is director of training and evaluation, Royal College of Physicians and Surgeons of Canada, and clinical professor of obstetrics and gynecology, McMaster University, Hamilton, Ont.

This article was adapted from an address given at the annual meeting of the Association of Canadian Medical Colleges, Winnipeg, Oct. 6–9, 1985. The views expressed are the author's and do not reflect the views or policies of the Royal College.

Reprint requests to: Dr. Robert F. Maudsley, Royal College of Physicians and Surgeons of Canada, 74 Stanley Ave., Ottawa, Ont. K1M 1P4

Since there are now fewer house staff available to satisfy the demand for a continuing increase in service, we must consider alternatives to the provision of service by house staff. As one example, the advent of the full-time emergency physician has not only resulted in better patient care but also improved the education and supervision of house staff. Another example is the employment of physicians to work in hospital neonatal intensive care units. Some medical schools and hospitals have pilot projects under way to evaluate the effectiveness of extended-role nurses in neonatal intensive care units. Some hospitals now engage physicians to act as surgical assistants on a fee-for-service basis.

The medical care provided in a teaching hospital is the responsibility of the medical staff, who delegate a certain proportion of that care to the house staff. When there is an increase in the volume of medical care or a decrease in house staff, a greater proportion of the care becomes the resonsibility of the medical staff. Alternatives to the provision of care by house staff should reduce the pressure on both medical staff and house staff (Fig. 1).

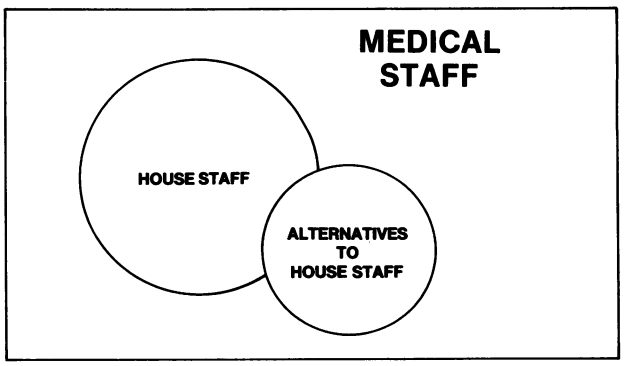

Fig. 1 — Providers of medical care in a teaching hospital.

Hospitals will have difficulty in meeting the costs of alternative services within their already constrained budgets. Further, some hospital services require house staff, especially in critical care. The educational needs of the trainees also have to be considered. Finally, provision of service by house staff is often viewed as a tradition and a source of prestige to teaching hospitals and is a "benefit" offered to attract high-quality medical staff.

Medical schools

Faculty members of medical schools are expected to participate in education and scholarship. However, in recent years an increasing volume of patient care has been needed to fund the operation of the schools. Recruitment of clinical faculty is limited by the shortage of base salary support and facilities. One of the traditional prerequisites of geographic full-time clinical faculty members is house staff assistance. In some schools this is seen as a *quid pro quo* for teaching undergraduates, in others as "compensation" for lower earnings.

A full complement of trainees provides the additional flexibility needed to accommodate more structured educational activities, research and clinical placements with greater relevance to career goals. However, in trying to assign the optimal number of trainees for existing educational resources and service needs and to meet external constraints, such as duration of clinical rotations, resulting from the training requirements of colleges and licensing authorities, we become victims of the logistics of scheduling.

The amount of negotiation required to reallocate interns and residents is similar to that needed to redistribute the hours of instruction in a medical school curriculum. Numbers of house staff and hours of instruction both represent in part the size of the power base, which is proportional to the size, perceived importance and prestige of the medical school department.

The past experience of clinical teachers often dictates to a large extent attitudes about service. Heavy service loads are rationalized on the basis of training requirements or preparation for the "real world". They might also be viewed as "rites of passage" or prolonged "hazing".

Clinical teaching units

One of the most important aspects of the clinical teaching unit is critical mass. That education is enhanced when several trainees at different levels of training work together as a team is a main component of the concept of the clinical teaching unit. In the unit trainees learn from each other and benefit from greater interaction with teaching staff. It is important to recognize that enhanced educational experiences will not happen simply by increasing the number of trainees. There must be a collegial relationship among the trainees and with the teaching staff in addition to active communication and coordination of activity.

If the concepts of critical mass and the clinical teaching unit are to be preserved, changes need to be made. Given a reduced or static number of trainees, increased service demands, expectations of medical staff and hospitals for house staff assistance, an increase in subspecialty services and pressure for more ambulatory care experience and elective time, the only solution appears to be a reduction in the number of and consolidation of clinical teaching units. This will take strong leadership by senior officers of medical schools and teaching hospitals.

The clinical teaching unit should be viewed as an educational experience rather than a geographic location or a work station. Important components of the unit such as ambulatory care experience should be seen as integral parts of education and not as competing with hospital ward or operating room service. Implementation of this concept requires the appropriate number of trainees and the cooperation and support of staff physicians and nurses.

Professional colleges

The professional colleges — the College of Family Physicians of Canada (CFPC) and the Royal College of Physicians and Surgeons of Canada — believe that training programs with a balance of structured education and clinical experience are desirable and necessary to meet their commitment to high standards of postgraduate education and certification. They believe that the learning experience should closely resemble the actual circumstances of medical practice. The provision of clinical service under supervision is the means to the end — not the end in itself — for trainees.

The CFPC strongly emphasizes ambulatory care in its training programs. Difficulties are often encountered because of the emphasis on trainees' involvement in ambulatory and long-term care, both of which require trainees to frequently return to their assigned practice. Residents in family medicine are sometimes seen by their colleagues as deserting the acute care "ship". This often places the resident in a conflict involving the educational needs and service commitments associated with the two settings.

The CFPC encounters resistance to increasing the number of family medicine internships at the expense of rotating internships. Rotating internships are often hospital based and hospital controlled; therefore, transferring positions to family medicine programs means a loss of control by the hospital and the potential loss of some service provided by interns to the hospital.

The Royal College, in its process of accrediting

specialty training programs, has begun to emphasize structured educational activities, integrated program activity, ambulatory care experience, and opportunities for scholarship and research for trainees. This has placed stress on residency programs as they attempt to meet service needs while broadening educational components of the program.

Professional organizations

To support their salary expectations, intern and resident associations argue that house staff provide essential hospital service. Several provincial governments have awarded binding arbitration in recognition of this argument.

House staff associations are also concerned about the excessive demands placed on some trainees, especially long on-call tours of duty. However, time allocated for clinical education and for on-call duty must be carefully balanced so that trainees can be reasonably expected to achieve their educational objectives within the usual training period.

Medical associations remain relatively silent about house staff issues to avoid offending future members. Some influential members in teaching hospitals and medical schools support the status quo because of its service benefits. Others who are in practice in community hospitals without teaching programs feel that geographic full-time physicians and trainees are somewhat pampered; they appear to favour training for community medicine and are not as concerned about issues of education and scholarship.

Professional nurses' groups and associations want more say in the provision of health care services and more control over the training and direction of specially trained nurses in hospitals. This may place them in conflict with hospital medical staff. Nursing associations also want improved salary levels for extended-role nurses. These issues have a bearing on the development, funding and direction of alternatives to house staff for patient care.

Provincial and national hospital associations may be involved in a push–pull situation between the majority of their members, community hospitals, and the minority, large tertiary care teaching hospitals. The latter require a special funding base to support expensive tertiary care services, education and research. Hospital associations may find it difficult to argue the case for preference for teaching hospitals with ministries of health, given that this may result in reduced allocation of funds to the majority of member hospitals.

Provincial licensing authorities

Although the provincial colleges are influenced by teaching hospitals, which view internship primarily as a service role and vocational training, they are now becoming more concerned that prelicensure training be more comprehensive and relevant — for example, by insisting on experience in ambulatory and critical care. The colleges are concerned about adequate supervision of trainees by faculty members and community practitioners who have heavy work loads and with service needs overriding the educational program; the public and hospital boards are concerned that licencees be adequately prepared for practice.

Provincial licensing authorities limit the number of internships available to each department in a teaching hospital according to educational resources. The difference in resources available to smaller and larger departments leads to unfilled service needs in the larger departments that may place inordinate patient care responsibilities on their trainees. Alternative clinical placements can often be found outside major teaching hospitals to provide interns with a broader experience. This in turn may permit a greater number of interns to be recruited for the overall program, although there is often a reluctance to assign interns to external sites because of disruption of night and weekend on-call schedules. Furthermore, recruiting more interns is not attractive to licensing authorities and governments concerned about an oversupply of physicians. And since virtually all Canadian medical graduates are assured an internship position, additional recruits for internship would have to be sought among graduates of foreign medical schools.

Ministries of health

Health care is a highly political issue in that consumer–taxpayers increasingly expect more health care services. Federal and provincial ministries of health want to limit the number of medical students, interns and residents to control costs. Provincial ministries especially limit the number of internships, seen as the gateway to active practice, by providing funding for internship positions equivalent to the number of graduates in the province. Thus, the teaching hospital system cannot expand to meet service needs through interns and so turns to residents. Since the pool of Canadian residents is also limited, teaching hospitals and training programs attempt to attract graduates of foreign medical schools to meet their service needs.

Decreasing government financial support of teaching hospitals restricts their ability to introduce alternatives to house staff for the provision of service.

Consumer–taxpayers

Consumers expect high-quality, universally accessible medical care at reasonable cost. Their

sense of community involvement and civic pride in their teaching hospitals is fostered by the hospitals in soliciting program and financial support. This may lead to the acquisition of sophisticated tertiary care equipment and facilities that place additional service demands on house staff. Although the public generally supports medical education and research, few people are concerned or knowledgeable about such issues. Public concern lies mainly with the provision of service.

Manpower

Even though there may be enough or a surplus of practising physicians, there is always an apparent shortage of house staff. The number of interns and residents is most directly determined by the service needs of the teaching hospitals and only indirectly by physician manpower requirements (although this may be changing). Provincial governments believe that too many physicians are being produced, but they have not come to grips with the short- and medium-term costs of having staff physicians and health care professionals other than trainees provide patient care in teaching hospitals. They ignore the long-term cost of producing too many physicians.

The number of interns is fairly tightly controlled by provincial ministries of health. The numbers of residents and fellows have expanded to meet hospital service demands. In 1985, 15.6% of trainees were funded from sources other than ministries of health, nearly double the proportion 5 years earlier.[1] If efforts by federal and provincial governments to reduce undergraduate enrolment in Canadian medical schools are successful, the ratio of Canadian graduates to foreign graduates among trainees and practising physicians will change unless there is a corresponding decrease in the number of foreign graduates allowed to train and practise in Canada. Such a decrease is being seriously considered by some ministries of health but is opposed by a number of groups representing friends and families of physicians who are landed immigrants. Although recruitment of trainees from developing countries may be well intentioned, most of these physicians stay in North America rather than returning home to practise.[2]

Most Canadian teaching hospitals are at a saturation point with regard to medical staff positions: there are few or no additional university or hospital funds available for salaries. The teaching staff need to maintain their incomes through clinical activity and cannot afford to further "split the pot" (except possibly in high-tech megadollars-per-square-minute specialties). Thus, clinical departments need, demand and recruit additional house staff. This is done to meet patient care responsibilities, often at no direct cost to the physician, university or hospital, and to recover the billings for the services provided by the trainees under their supervision. Such high-volume clinical activity is often rationalized by blaming the underfunding of education and research: the way to support the educational and research activities of medical staff is to maintain the volume of patient care and, hence, cash flow.

The net effect is more physicians in private practice. These new practitioners will provide many of the highly specialized services that until recently were performed by the teaching staff of major teaching hospitals. In order to "survive", the teaching staff will then have to take on more, and more sophisticated, tertiary care activities, to the detriment of education for undergraduate and many postgraduate trainees. However, because they will be needed for service, the trainees will not be permitted to train in other settings where the experience would be more appropriate to their preparation for practice. The other alternative for major teaching hospitals is to provide more attractive primary and secondary care, such as extended hours and walk-in clinics, which will require more coverage by attending staff or house staff. With this latter alternative there at least may be educational benefits for the trainees.

Breaking this cycle will have at least two positive results: the numbers of house staff in training will truly reflect manpower needs, and the educational setting and activities can be determined in the best interest of the trainees' preparation for independent practice.

The future

Changes in health care delivery and in medical manpower and education will significantly affect the issue of service and education. There will be continuing pressure by governments to limit the size of the medical profession. This will be effected by decreasing undergraduate and postgraduate enrolment and by further restricting immigration of physicians. With an apparent balance of physicians in practice and in training, there will be a further shift from quantity to quality in the process of medical education. There will be more emphasis on postgraduate medical education and less on vocational training.

Changing practice patterns and life-style expectations among physicians will provide a larger pool of salaried staff physicians to work in teaching hospitals. There will be a greater demand for time-sharing and for part-time residency programs to accommodate both the family and the professional needs of medical graduates.

Highly specialized tertiary care medical and surgical subspecialties will continue to develop. The numbers of house staff needed for service in these primarily hospital-based subspecialties will considerably exceed the numbers of trainees required to practise them in the community.[3] The parent disciplines of medicine, surgery, pediatrics, psychiatry, and obstetrics and gynecology will be under constant pressure to have trainees spend

more time in their subspecialties. The educational relevance of training community physicians in tertiary care hospitals will be increasingly questioned.

There will be changing roles for all health care professionals, particularly nurses. This will occur not only because of the need to provide alternatives to house staff but also because of the increased sophistication and changing career goals of nurses.

The earning power of geographic full-time staff physicians, who will lose some traditional areas of practice, may be eroded, and this could produce conflict between medical schools and teaching hospitals. Providing funds for salaries for staff physicians and nurses with special skills will present a problem for teaching hospitals and ministries of health.

There may be conflict between trainees and extended-role nurses. The nurses, employed by the hospital, will not be allowed time to teach students and house staff, nor will there be the same *quid pro quo* that now exists between trainees and physicians for service and teaching. The nurses will need enough clinical and technical activity to maintain their skills and to teach new extended-role nurses. This may limit some of the clinical opportunities for medical students and house staff. The predictability and reliability of salaried physicians and nurses, who do not have a commitment to frequent educational activities, will appeal to hospitals. When teaching hospitals are less dependent on house staff for providing essential services, they may not participate in or support teaching programs. Intern and resident associations may lose some bargaining power with hospitals and government but may progressively shift their emphasis toward quality in education and a salary structure based on reasonable stipends rather than on payment for services rendered.

Strategies

Achieving the desired balance between service and education will require successful implementation of a number of strategies. First, institutions such as medical schools and teaching hospitals must realize that there will be change, that we need to adapt to change and that yesterday's solutions will not be highly successful. Courage and leadership will be needed to effect the necessary changes.

Medical schools must critically review the size and number of current training programs. A hierarchy of program priorities that are consistent with overall manpower needs should be established to meet the mission and goals of the medical schools. Eliminating some training programs and amalgamating others will be necessary.

For a new service or hospital to be included in a residency program, it must provide either additional educational resources required by an existing program or experience that will significantly enhance the program. The addition of trainees to a service or hospital must not be seen as a way to increase the service load or decrease the number of other health care professionals. New programs should be developed that are not dependent on trainees for service.

Medical schools and teaching hospitals will need to continue to pressure governments for adequate funding of clinical faculty. The coordinated support of professional organizations in this effort is extremely important. Medical school leaders will need to work diligently to change attitudes about the proper balance of service and education.

The philosophy that the number of postgraduate training positions must be congruent with the physician manpower needs of Canada must be adopted.

The primacy of education in postgraduate medical training must be established and supported by all parties. The education "horse" must be placed before the service "cart".

The objectives of postgraduate training must be clearly identified, and programs must be structured to enable trainees to meet these objectives. The principle of the learning experience being as similar as possible to future career activity must be followed. The professional colleges and the provincial licensing authorities must continue to promote criteria for program accreditation that reflect education principles and to implement evaluation techniques that adequately assess attainment of the objectives. Our concept of the clinical teaching unit will require careful review and will probably need to be changed.

The dependence of teaching hospitals on the provision of service by house staff, especially in critical care, must continue to be addressed, and ministries of health must continue to be pressured to adequately fund alternative methods.

We will have to address these issues in a forthright and rational manner. Striking a proper balance between service and clinical education is an extremely important goal that *can* be achieved. A proper balance will enable us to adjust the numbers of postgraduate trainees to be consistent with medical manpower needs and, most important, to ensure the highest quality of postgraduate medical education.

References

1. Office of Research and Information Services: *Survey of Post-M.D. Clinical Trainees (Internes and Residents), January 1, 1985*, Assoc Can Med Coll, Ottawa, 1986

2. Waugh S: Where are they now? *Ann R Coll Physicians Surg Can* 1985; 18: 457–459

3. Tarlov AR: Shattuck lecture — The increasing supply of physicians, the changing structure of the health-services system, and the future practice of medicine. *New Engl J Med* 1983; 308: 1235–1244