PHYSICIAN TRAINING -TOWARDS THE NEW MILLENNIUM

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Let me tell you how honoured I am in my own right and on behalf of the College to have been asked to give this oration. I am certainly unaccustomed to speak on such a topic.

I wish to begin by telling you a short story. The famous English detective Sherlock Holmes and his trusty companion Dr. Watson left their lodgings in Baker Street to go camping. They set up their tent and, after a good dinner, went to bed. In the early morning hours Holmes nudged Watson and woke him up. "Tell me, Watson," he said, "What do you see?" "Ah" replied Watson. "I see millions and millions of stars." "Yes", said Holmes, " but what does it mean to you?"

"Well," said Watson after some thought, "Emotionally it indicates to me the endless beauty of nature. Astronomically it indicates that there are millions of galaxies and probably billions of planets out there, theologically it confirms my belief that there must be a god to have created all of this, meteorologically it tells me we will have a fine day tomorrow. Now tell me Holmes what does it tell you."

"Elementary, my dear Watson", replied Holmes, "some scoundrel has stolen our tent."

In some ways this exemplifies the problem confronting us as medical educators - a need to produce doctors with the social and cultural perspective of Watson but also the pragmatic analytical capacities of Holmes.

As we approach the end of this millennium and contemplate the next, it is appropriate to think about where postgraduate medical education should be heading. It is important that you realise what I am. I am not a professional educator, I am a physician and a subspecialty one at that. I have, however, had opportunities in my professional life to teach undergraduates and postgraduates and for a time had the privilege to participate in and subsequently Chair at various times the Written Exams Committee, the Committee for Exams and the Board of Censors of the Royal Australasian College of Physicians. In my present role as President of the College I have an overall responsibility for our educational activities. We have recently started an overall review of our education and assessment procedures leading to Fellowship to run alongside our review of our MOPS program which had previously been put in place. Although various modifications to our procedures had been put in place over the years no comprehensive review had been undertaken since Bryan Hudson had introduced his radical reforms in the early 1970s.

When I try to think of what characterises the system of medicine we espouse and sets it apart from others, I conclude it is that it is based in empirical science. Of course we continue to value a range of humanistic qualities but these are valued equally in other systems. Thus, whatever else we do with postgraduate education in the next millennium we must ensure that young physicians are well grounded in science and that ageing physicians continue to understand the science in which their craft is embedded. This is not just an option but a necessity. As has been pointed out by Holly Smith practising physicians must continue to understand the language of their profession. When we turn to read the Lancet or the New England Journal not just Nature or Cell, we are confronted with the language of molecular genetics or cell biology or with the language of the social sciences. Not to understand is to cut ourselves off from the knowledge we need to practice at the highest level. I wonder what will be the new dialects in 50 or 100 years time?

Before considering some of the factors impacting on postgraduate education I think it is important to suggest that it is desirable if not essential that we set ourselves a philosophical framework with which we pursue our educational objectives.

The Royal College of Physicians and Surgeons of Canada has been undertaking an extensive review of its training with a view to the new millennium. One of its working parties has addressed the issue of the essential roles and key competencies of specialist physicians. It has defined these, outlined the competencies and defined the specific objectives of training.

The essential roles they have defined are:

- Medical Expert
- Communicator
- Scholar
- Collaborator
- Manager
- Health advocate
- Professional

I do not intend to go through these in detail but I believe anyone with a serious interest in postgraduate medical education would find a careful consideration of the Canadian documents useful. Since, as I have mentioned, we are currently undertaking a detailed review of our education and assessment procedures and also of our maintenance of professional standards program, we have included them in our review.

Let me however refer to three of the roles I mentioned, to give you the flavour.

Medical Expert and Clinical Decision-Maker. The Canadian document (I) offers the following definition and list of desirable competencies from which I qoute:

Definition

Experts possess a defined body of knowledge and procedural skills, which is used to collect and interpret data, make suitable clinical decisions, and perform diagnostic and therapeutic procedures within the boundaries of their expertise. Their contribution is characterised by up-to-date, ethical, and cost effective clinical practice and effective communication, in partnership with patients, health professionals, and the community. The role of a medical expert and clinical decision maker is central to the function of specialist physicians, and draws on the competencies included in the roles of scholar, communicator health advocate, manager, collaborator and professional.

Competencies

The expert is able to:

- Demonstrate diagnostic and therapeutic skills to effectively and ethically manage a spectrum of patient care problems within the boundaries of his or her specialty.
- Demonstrate medical expertise in situations other than in direct patient care. Recognise personal limits of expertise.
- Demonstrate effective consultation skills. This includes presenting well documented assessments and recommendations in both written and oral form, in response to a request from another health professional.

Manager

Definition

Specialists function as managers when they make daily practice decisions involving resources, co-workers, tasks, policies and their personal lives. They do this in the setting of individual patient-care, practice organisations, and in the broader context of the health-care system.

Competencies

The specialist is able to:

- Use time and resources to balance patient care, learning needs, outside activities and lifestyle.
- Allocate finite health care resources effectively. This implies the ability to make sound judgements on resource allocation based on the evidence of benefit to patients and the population served:
- Work effectively and efficiently in a health care Organisation.
- Use information technology to optimise patient care, continued selflearning and other activities. This implies the ability to use patient-related databases, access computer-based information, and understand the basics of medical informatics.

Professional

Definition

Specialists have a unique societal role as professionals with a distinct body of knowledge, skills and attitudes dedicated to improving the health and well being of others. Specialists are committed to the highest standards of excellence in clinical care and ethical conduct, and to continually perfecting mastery of their discipline.

Competencies

The specialist is able to:

- Deliver the highest quality care with integrity, honesty and compassion. This implies an awareness of racial, cultural, and societal issues that have an impact on the delivery of care, and an ability to maintain and enhance knowledge, skills and professional behaviours.
- Exhibit proper personal and interpersonal professional behaviours.
- Practice medicine in an ethically responsible manner that respects the medical, legal, and professional obligations of one who belongs to a selfregulating body.

I will not list the specific objectives which are really meant to set the educational agenda. While we may all have some quibbles with the detail of the Canadian document I think the clear definitions which they have arrived at are enormously helpful in allowing one to set a framework around which one can define educational objectives, educational methodologies and appropriate assessment procedures. You may say that the Canadians are defining supermen and women but I believe we should make no bones about the fact that what organisations such as ours are about is excellence and standards.

There is now a clear recognition that postgraduate training must be seen as part of the continuum starting at entry into Medical School and ending with retirement from practice. It is also becoming clear that this must apply to all doctors not just those who have undertaken traditional vocational training. Undergraduate education in general, and in the postgraduate schools in particular, is intended to prepare students for continuing self education placing emphasis on developing the abilities to define problems, obtain information and draw conclusions - skills that will be needed lifelong. It is also recognised that young doctors emerging from medical school are not equipped, after a further year or two of unstructured apprenticeship, to undertake unsupervised practice.

In Australia, the immediate postgraduate years are now being specifically integrated into the education continuum. Under the auspices of Postgraduate Committees in all States, objectives for training in PGY1 have been established, educational activities put in place and assessment of outcome established. A similar process to cover PGY2 is in process of development. The underlying philosophy is that these should be years providing a wide general experience although it is recognised that some vocational streaming would be appropriate in the 2nd year. For those individuals who do not wish to undertake one of the College based training programs, there are plans to develop training programs for PGY3 and beyond. Due to the peculiarities of our health system, as well as for sound educational reasons, there are now very considerable pressures for all medical graduates to undertake formal vocational training. If we are to insist that all doctors need to undertake further formal training after they leave medical school, regardless of which branch of medicine they will practice in, it clearly has enormous resource implications. It is equally clear that the knowledge acquired by the end of vocational training will not sustain a lifetime of practice and thus there is a need for continuing education to ensure the maintenance of professional standards. In Australia particularly through the auspices of the Committee of Presidents of Medical Colleges, we are examining the possibility of different Colleges developing educational activities in common. It is apparent that many (perhaps all) Colleges have, in common, certain core learning objectives for their trainees, e.g. a knowledge of ethics, of epidemiology and statistics and perhaps even basic sciences. Thus it is seen to be sensible both in terms of pooling expertise and maximising resources to develop educational modules which can be shared. The development of shared modules also allows trainees to retain credits if they wish to change direction after some time in a particular training program.

Some particular issues are impacting on our educational activities in Australia and give force to efforts to provide efficient and flexible vocational training emphasising educational content rather than mere time serving. These include

1) the move to an increased age of medical graduates brought about by the emergence of Graduate Schools of Medicine and a more liberal late age entry policy in the traditional straight from school program. For example, in Queensland in the first year of the Graduate Medical Course the mean age at entry was 27 although this fell in the next year, and
2) the increased percentage of women in Medicine and the increased percentage of those women who are undertaking further postgraduate training. These two factors will mean that we have to evaluate such things as the optimal length of postgraduate training, the place of part time training etc.

A matter of ongoing debate is what is the correct balance between general and subspecialty training for future physicians and paediatricians? Our approach has been to have three years of broadly based training followed by a further three years of specialised training. This general approach is widely used although in some countries specialisation can begin immediately after graduation or even as an undergraduate. What should our future direction be? Given the ever-increasing information load, how realistic is it that specialists can maintain even rudimentary general skills? Given the nature of physician practice, based on the central role of the consultation, I would hold that a strong general basis can only enhance the standard of subsequent specialist practice. However, if we are honest, there are already those in the physicianly ranks for whom the traditional consultation is no longer the central event in their practice. For instance, does the procedural cardiologist need to have a broad range of physicianly skills or should he go from medical school to a technical training course so he can carry out these procedures at a time in his life when his hand is steadiest, his vision most acute and his stamina greatest. Should he be considered a physician or an interventional radiologist practising in a very limited area? I conclude that we need to keep our minds open and not be mesmerised either by tradition or by a belief that one model fits all. If we can define the roles of the particular doctor, clearly we can develop educational objectives and develop appropriate educational methodologies. We train surgeons differently from physicians and cardiologists differently from endocrinologists. I believe we need to give very much more thought, even within internal medicine, as to what are the common needs and what is discipline specific. In addition we should question whether it is appropriate to define adequate training in terms of time rather than content and particularly whether all disciplines or even all individuals within a discipline require the same length of time to, be adjudged competent to practice as consultants.

What principles should we be applying to education in the future? The Canadians are at pains to point out that the educational methods should be tailored to the particular objective. In our own review which is still at an early stage, two principles already appear to be emerging. One is that training should continue to be on an apprenticeship model and the other is that education should be based on the principles of adult learning.

It is our hope, and indeed our expectation, that tomorrow's graduates will be better versed in the principles and practice of self directed learning than those of our generation. In the undergraduate courses they will already have had to cope with an information overload far greater than that which confronted us. They will

have been expected to set learning objectives, seek information and decide what is important and above all, to use the incredible resources available to obtain factual knowledge. It will be our duty to foster and expand these skills. However, it will also be our duty by precept and example to help develop the clinical and humanistic skills that surround the scientific basis of our profession.

Part of our contract with our young colleagues will be to show that our own practices are based on evidence. Our authority as teachers will be vulnerable as never before because of the ready access to information. The old tension between "it is not known" and "I don't know" will be starkly evident. The very presence of this easy access to factual knowledge can bring with it a difficulty in dealing with uncertainty. Teaching how to cope with this uncertainty in the many circumstances when adequate information is not available and we are forced back on a combination of first principles and experience will be an important role.

If I can just pursue the issue of evidence based medicine a little further. I have already stated my belief in the centrality of science to our craft. I am a strong believer in using the best available evidence for all our activities. However, what we should also be encouraging our young people to do is to question the fundamental basis on which that evidence is constructed. They should consider whether our basic constructs are not the newest version of the miasmic theory of disease.

This leads me on to the place of research in the training of future physicians. There are two aspects. First, it would be my contention that the best education for future physicians takes place in institutions and by people active in research. The chance to be exposed to the enquiring mind of the true researcher is invaluable. Second, undertaking research as part of training is potentially valuable. I personally do not believe making a period of research mandatory is appropriate, particularly if it is coupled to a requirement to publish at least one paper before being granted certification. While this may encourage a few to take on a serious research commitment in the long term, it may well give rise to a lot of superficial research which will add to the glut of lower quality publications. What I believe we should do is be careful in designing our education and training programs to foster significant research experience without imposing a crippling burden either financially or in time in the overall training program. We have addressed this with partial success by allowing MD or PhD programs to overlap the time usually devoted to clinical training and thus not lengthening the time taken to obtain our diploma. There is still, however, the risk that the seriously research oriented physicians by the time they have finished professional training, a PhD and one or more post docs, will be approaching the retirement age by the time they are in a position to obtain a substantive post. The capacity to develop true clinician scientists will be one of the most significant challenges we will have to face in the coming years in postgraduate medical education.

Let me now turn to one of the most vexatious issues in postgraduate education, that of assessment. I will confine myself to some remarks about assessment of physician vocational training. I would contend that most assessments should be formative although of course summative assessments are necessary. Again the Canadian framework makes apparent what is well known to all of us - that the methods of assessment need to match what it is one is trying to assess. Among our responsibilities we must assure that the type of assessment is appropriate and of a very high technical standard. This requires a high commitment of resources. It is still our view that direct assessment of clinical competence is important for physicians and paediatricians. We persist with a national clinical examination at the end of the basic training program. In the last few years we have modified the clinical exam to enhance its psychometric properties. The Director of Education, Neil Paget, assures me it is now a robust examination for this type of exam. However, the downside is that the logistics of providing this exam with its increased number of observations have become horrendous. We have explored other formats e.g OSCE. We have discussed the role of standardised patients and a range of other issues and decided for various reasons not to adopt them. One thing we have done in order to improve the reliability of the exam is to run regular training and calibration sessions for our examiners.

As you are probably aware, after our trainees have passed the examination at the end of basic training, we do not have an exit exam. For this we are often criticised. However, I am a stout defender of our system. During advanced training our trainees can expand their horizons, develop particular interests and further their abilities to set their own objectives. Most will need some guidance and all will need a stimulating environment in which to develop. In my opinion it is far more important for the trainees to develop a sense of excitement and enquiry, and decent critical skills than to try to see 100 examples of every condition known to their specialty. In the more technical areas a sufficient experience is clearly necessary. What is of particular concern to me is that as mentors we should not be trying to clone ourselves. Our skills are becoming dated. There is a new world awaiting the young. This of course is not to decry the importance of role models which remains as crucial as ever.

In keeping faith with the community it is, of course, crucial that we ensure those completing our programs are well qualified. Since in our system we rely on supervisors' reports for this assurance, we must ensure that

these supervisors are well trained and competent. We are developing a system of training and certification of our supervisors. Chairmanship of a department does not guarantee one has the necessary skills to be a good supervisor.

Before turning to consider, briefly, some issue to do with MOPS I would like to mention some of the principles and directions coming out of our review of education and training. The first is the need to broaden our curricula to encompass a public health perspective as well as illness models of care. The second is to reconsider the setting for training moving much of our education from tertiary level teaching hospitals to ambulatory and community settings.

Points that have been raised some of which I have already mentioned are:

- There must be clear objectives and guidelines for training. Clearly, examinations drive curricula or at least the activities of trainees. However, most would now agree that there is a need to define a curriculum and training objectives and that the assessment procedures should subserve that curriculum. The problem in medicine is to strike the balance between a series of motherhood statements and a proscriptive list that looks like the index to Harrison's textbook. While I have previously been opposed to the definition of competencies for a complex profession like medicine, I have become more attracted to the Canadian approach of defining roles and competencies since they can be framed in a way which still allows a broad approach and not be proscriptive. We are currently trying to produce a satisfactory statement on curriculum and it is proving very difficult.
- Training and assessment should include humanistic skills and attributes, including ethics, self-management, self-appraisal, communication skills, an understanding of the health care system and critical appraisal. The real difficulty in many of these areas is developing valid assessment tools.
- The educational principles and methods of undergraduate and early postgraduate learning need to be continued
- Training should continue to be apprenticeship based
- Training should be patient-oriented, learner driven, should encompass health needs as well as illness models of care, and should have a significant focus on ambulatory and community needs
- Training should provide a foundation for lifelong learning and self-appraisal after qualification as a consultant
- Supervision must be of the highest standard, with supervisors trained and accredited
- Assessment should be predominantly formative

May I turn briefly to CME, or as we term it, MOPS. If the issues surrounding vocational training are significant, these are formidable. Here we must have strategies which will sustain learning over 30 - 40 years. These strategies must allow for an infinite range of individual practice but must address areas of need as well as areas of interest for the individual and ultimately must reassure the community of their efficacy in maintaining a high quality workforce. The use of the principles of adult learning with self directed learning and the use of a variety of technologies will be prominent. In general the group is highly motivated but one has to develop mechanisms to ensure participation of the whole group. Perhaps the greatest challenge however is to develop methods that can attest to the standards of performance of all physicians, not just their knowledge or competence as judged by some exam process.

Finally, if I could again state the obvious. The group of people we are asked to educate are highly intelligent and highly motivated. Our duty is to fuel their enthusiasm and facilitate their journey of discovery. However, we have to answer to the community for our efforts and therefore must have an appropriate means to ensure we have been successful. It is worth reflecting on the fact that failure of our trainees to reach the goals we set, probably reflects more on us as educators that the trainees as scholars. I believe that the products from our own College system practice high quality medicine as I am sure those who emerge from your system do as well. However, Physicians are by nature conservative and the institutions we inhabit are conservative and difficult to change. We must remember that we are not in the business of training young doctors for yesterday or even for today but for the future. So, we should be prepared to question all the old dogmas, all the things we hold most dear to our hearts and, after careful consideration as befits good physicians, change those things that will benefit from change.

(1) Societal Needs Working Group, CanMEDS 2000 Project, "Skills for the New Millennium". Annals RCPSC, 1996:29,206-216.

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