Early 21st Century Professional Practice: Change and Challenge†

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Mr Pro-Chancellor, Graduates, Ladies and Gentlemen.

Today is a day of rejoicing for all of you, graduates, parents, relatives and loved ones. I can share in your joy and also a sense of relief that you have passed the first and for some, the second professional exam in your career. I congratulate all of you on your academic success. You may not realize your privileged position in Singapore society but as you know out of some 40,000 babies born 20 to 25 years ago, only 200 or less made it to the local medical and dental faculty. This means half a per cent or less of your cohort have qualified as doctors and dentists of today.

With you all graduating today, are there enough doctors to serve the public?[1] What about the strong private demand for doctors? If some 50 specialists and 30 general practitioners and another 50 doctors leave for private practice over the next few years,[2] will the public feel short-changed? The Government is concerned enough to state publicly that ministerial pay formula is to be reviewed,[3] that the SAF's backbone of warrant officers and specialists will be paid more,[4] and that legal officers in civil service are to be paid more.[5] Parliament was told last year that the Government could "not pay even close" to what private sector specialists earned. I hope I am wrong to think that our doctors and dentists have been forgotten in this respect this year. So all that aside, what does society expect of you?

Let me begin with this story on time management because life is an accumulation of time sequences.

One day an expert was speaking to a group of business students and, to drive home a point, used an illustration those students would never forget.

As this man stood in front of the group of high-powered over achievers he said, "Okay time for a quiz." Then he pulled out a one-gallon, wide-mouthed mason jar and set it on a table in front of him. Then he produced about a dozen fist-sized rocks and carefully placed them, one at a time, into the jar. When the jar was filled to the top and no more rocks would fit inside, he asked, "Is this jar full?" Everyone in the class said, "Yes." Then he said, "Really?" He reached under the table and pulled out a bucket of gravel. Then he dumped some gravel in and shook the jar, causing pieces of gravel to work themselves down into the spaces between the big rocks. Then he asked the group once more, "Is the jar full?" By this time the class was onto him. "Probably not," one of them answered. "Good!" he replied. He reached under the table and brought out a bucket of sand. He started dumping the sand in and it went into all the spaces left between the rocks and the gravel. Once more he asked the question, "Is this jar full?" "No!" the class shouted. Once again he said, "Good!" Then he grabbed a pitcher of water and began to pour it in until the jar was filled to the brim. Then he looked up at the class and asked, "What is the point of this illustration?" One eager beaver raised his hand and said. "The point is, no matter how full your schedule is, if you try really hard, you can always fit some more things into it!" "No," the speaker replied, "that's not the point. The truth this illustration teaches us is if you don't put the big rocks in first, you'll never get them in at all." What are the 'big rocks' in your life? A project that you want to accomplish? Time with your loved ones? Your faith, your education, your finances? A cause? Teaching or mentoring others? Remember to put these big rocks in first or you'll never get them in at all. So, tonight or in the morning when you are reflecting on this short story, ask yourself this question: What are the 'big rocks' in my life or profession? Then, put those in your jar first.

As you contemplate for yourself as individuals what these big rocks are for your personal life, I would like to highlight what these big rocks are for the profession you now belong to. But before that, we must be aware of the fast and ever-changing landscape in which we practise. I wish to speak about three mighty changes, these being more revolutions than evolutions.

Information Technology

The first is the impact of Information Technology. With a recently formed Ministry of Communications and Information Technology, it is prudent for us to know what lies ahead. In 1968, who would have thought that in 1998, typing would be a critical skill for doctors, or that we would

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still be struggling to build and implement electronic medical records?[6] Or that today, we will be focusing on a "knowledge-based economy."? We are constitutionally incapable of achieving perfection, as we are human beings.[7] Yet we act as though human beings are perfectible by giving them enough training, threats and guilt and hoping that they will emerge as ideal doctors—ever alert, ever astute and never in error. In 5 years or more this attitude will be half buried at last. As we begin to deploy machines to compensate for our human weaknesses, we may finally abandon the delusions that we are ourselves flawless machines.

The Knowledge Industry

Traditional continuing medical education is of very limited utility.[8] Increasingly educational interventions will be delivered at the point of care or based on ongoing analysis of errors occurring during medical care.[9] Medical education will increasingly be tied to medical practice. Accessing the primary medical literature by computer, critically analysing and evaluating journal articles will be activity not sustainable. It is inefficient, even wasteful for every clinician to individually hunt down, assess, sort, compile and store clinical information. The immense torrent of medical knowledge will sweep away traditional attitudes. Clinicians will work instead with processed data that are delivered to the point of care. This is called just-in-time information—the right information, in the right form and quantity, at the right time. Knowledge management will become an increasingly industrialised process. Tomorrow's clinicians and that includes you, will spend as little time with the primary literature as today's, but they would not feel guilty about it.

Another important point about this knowledge industry is that it will increasingly serve patients as well as clinicians. The role of the Internet and Web delivery will grow. Health and medical information will be distributed to the lay audience. Patients will complement this by sharing their own experiences via the Internet and by outreach from international disease-oriented organisations. The material may be of good quality or sheer nonsense. Corporate marketing will grow in influence and in power, powered by very sophisticated uses of information technology. Somebody has to give a "seal of approval"—maybe it is the trusted authority of government, professional or academic organisations.

These knowledge resources will be designed for use at the "point of care", invisibly embedded in order entry and results display systems and in system reminders and alerts. Clinicians need new skills to judge the validity, utility and trustworthiness of the knowledge embedded in their clinical tools. Patients will become proactive, emboldened by the little knowledge IT avails to them so freely.

It was in 1986 that William Gates, already exceedingly rather than obscenely wealthy, predicted a glowing future for an astounding new technology—the CD-ROM.[10] A hundred-fold reduction in the cost of distributing information was achieved. By 1991, CERN, the European Laboratory for Particle Physics, released the World Wide Web (WWW), developed by Tim Berners-Lee.[11] The cost of distributing information fell yet further, to almost nothing. The Web has become an information superconductor providing friction-free publication and approximately zero cost information distribution. Internet technologies including the WWW and its descendants will be the infrastructure for clinical work come the new century. This infrastructure will be as invisible to the user as today's electrical utilities are. While caring for patients, the clinician will use numerous computing devices of many shapes and sizes; many of them will be special purpose tools. All devices will be networked, frequently wirelessly and they will use Internet or web technologies. These devices will be interchangeable and increasingly disposable.

Are you ready for this IT revolution in clinical practice?

The Human Genome Project

I turn now to the next major medical advancement on the horizon—the completion of the Human Genome Project, with its medical and societal consequences.[12] The Human Genome Project set out to characterise in detail the complete set of genetic instruction of the human being. Mapping the human genetic terrain would lead to a new understanding of genetic contributions to human disease and the development of rational strategies for minimising or preventing disease altogether, all for the common good of society. Critical social questions such as whether the new technologies for reading our genetic constitution would challenge our identities, our fundamental right to privacy or our freedom from discrimination need answers. This project, begun on 1 October 1990, is due to complete by 2003. This Book of Life will be accurate, affordable and accessible at no cost to scientists around the world. More than that, all sequence data will be freely available and in the public domain, the updating policy being that data will be released every 24 hours to a free, publicly accessible database. How will this affect us?

Identifying human genetic variations will allow clinicians to sub-classify diseases and adapt therapies to the individual patient. There may be large differences in the effectiveness of medicine from one person to the next. Toxic reactions can also occur and are likely to be a consequence of genetically coded host factors. The new field of pharmacogenomics is born in an attempt to use information about genetic variation to predict responses to drug therapies.

Genetic approaches to disease prevention and treatment will include an expanding array of gene products for use in developing tomorrow's drug therapies.

What are the ethical, legal and social implications knowing that primary and fair use of genetic information especially in health insurance, employment and medical research are pressing issues? Several committees in the US are examining these. The study includes the integration of genetic technology and information into health care and public health activities; the use of knowledge about genomes and gene-environment interactions in non-clinical settings and consideration of the ways in which racial, ethnic and socioeconomic factors affect the use, understanding and interpretation of genetic information, the use of genetic services and the development of policy.[13] All this sounds unreal but exciting.

Genetically-based, individualised preventive medicine is on the horizon and it would make a profound contribution to human health. For this vision to be realised, "genetic discrimination" needs to be addressed and protections against the misuse of genetic information will need to be firmly in place. The other critical challenge which applies especially to us, is that physicians, nurses and other health care providers will need to become familiar with the emerging field of genetic medicine. Medical genetic specialists who can sort out the most complex cases are sorely needed but there will not be enough of them to go around and genetic medicine will be practised for the most part by primary care providers. Moving genome technology from the laboratory to the health care setting will make it possible for us to read the instructions contained in an individual person's DNA.

William Osler described the goals of medicine thus, "To wrest from nature the secrets which have perplexed philosophers in all ages, to track to their sources, the causes of disease, to correlate the vast stores of knowledge, that they may be quickly available for the prevention and cure of disease—these are our ambitions".[14] He wrote this in 1902 and some 100 years later it would seem that his vision will be reality.

Threats to Professionalism

The third change is already too evident in Singapore. It is the multitude of threats to professionalism posed by the corporatisation and the increasing commercialisation of medicine. It is critical that physicians reassert the profession's key advocacy role on behalf of patients.

We should not allow medicine with its fundamentally altruistic and patient's welfare first philosophy to be replaced by a complex, profit-driven corporate system with capitalistic values.[15] Only by maintaining a practice governed in the long-standing values of the profession will the health care needs of patients be truly served in an efficient and cost-effective manner. The inherent clash of values between business and medicine is what I wish to highlight now.

The 5 major capitalistic values emphasise the following: profit, competition, responsibility to stockholders, services driven by the market and standards set by external forces. In contrast, the 5 major values of the medical profession however have traditionally emphasised service, advocacy, altruism, services driven by the application of a specialised body of knowledge and standards set and maintained internally. Further, capitalistic values stress on consumerism, short-term goals and giving society what it thinks it wants. On the other hand, the medical profession stresses humanism, long-term goals and meeting society's needs.

Let me contrast consumer and patient. Consumer comes from the Latin "consumere", which means, "to eat completely." Physicians care for the suffering, not for those who consume. Physicians are not a commodity but professionals. William Osler had this to say in 1903: "The practice of medicine is not a business and can never be one... Our fellow creatures cannot be dealt with as man deals in corn and coal."[16]

The conflict about whether the practice of medicine represents, at its best, a special relationship between physician and patient, or a commodity that is subject to business transactions reflects to some extent the clash of capitalistic and professional values. The challenge to us today is to ensure the preservation and strengthening of professional values that have defined the success of medical education and medical care. Failure to do so will abrogate our responsibility not only to the physicians we educate but also to the patients and society we serve. There will be increasing pressure on physicians to adopt business or trade strategies in the name of cost containment and of competition in the health care market place. These strategies run directly counter to the professional standards and are a potential threat to Medicine's status as a profession. The emphasis on finances must not erode Medicine's professionalism; Medicine must not become deprofessionalised.[17] It is our responsibility to pass the torch of professionalism to the next generation of doctors.

What are the basic components of professionalism?

Paramount among these qualities is an ethical code more stringent than society's legal code. This code demands that professionals place public interest ahead of self-interest. So a profession is by definition, a public trust. So long as a profession enforces its code effectively, society will grant the profession autonomy. Trades in contrast have a proprietary orientation, existing primarily to produce goods

or services that will provide a livelihood for the trade members. Because trades by definition act from self-interest, society regulates trades.

A professional code of ethics compels members to adhere to high standards. In an ideal world, the phrase ethical professional would be redundant: one must be ethical to be a professional. Trade workers have no implicit or explicit contract to serve society. Trade workers place financial interest above product quality; they may produce high or low quality products depending on which will generate the most money for themselves and their business. Their job is only a means of livelihood.

Trades use the corporate structure which is a hierarchical organisation with predetermined lines of authority and communication. Professions use the community structure which is a voluntary gathering of people united by a common goal. The engine powering health care reform is cost containment. Corporate structure has worked for business to control costs, so seemingly it should work for medicine—but does it and can it?

Physicians have always needed to earn a living which means that financial considerations have always been part of medical decision making. But these proprietary interests have been balanced by Medicine's ethical code with the net result that physicians have functioned primarily as professionals. Currently there is a broad-based social mandate to constrain medical costs. Because medicine is a public trust, physicians are obligated to respond to this mandate from society, the same society that grants trust and autonomy to physicians. We need clear-thinking physicians to discover solutions to constrain costs and preserve the essential aspects of high quality health care and professionalism.

Besides the required delicate balance between financial and professional considerations, we must also ensure the existence of an appropriate balance between the science of medicine and its art. Medicine is grounded in science much more now than ever before in history, and the core of medicine must remain science and its clinical application. Nevertheless science alone can never be enough. A solid exposure to the humanities is necessary to ensure a humanistic approach of doctors to the care of their patients and that their attitudes and values reflect a concern for human beings, their achievements and their sense of dignity. A special relationship exists between individual physicians and their patients. The provision of altruistic service is a hallmark of any profession, but this is especially true of medicine. Physicians today practise in a different environment but that environment cannot consist solely of a business model in which health care becomes a commodity and physicians become factory workers who depart promptly when it is five o'clock. It can never be "profits before patients", "money before medicine".

Doctors practising in Singapore take the Oath of the Singapore Medical Council. The corporate transformation of medicine will challenge many of the ideals that may make it difficult for young physicians to honour their oath. An enlightened medical leadership is essential for preserving professionalism and preventing a hollow mockery of the oath. The changes in our health care system make it essential for us to know, at the most fundamental level, who we are and what we do.[18] Our profession's values define who we are and what we do and those values must become the anchor that holds us to our core mission. William Olser in 1903 said, "The times have changed, conditions of practice altered and are altering rapidly, but the ideals which inspired our earlier physicians are ours today—ideals which are ever old, yet always fresh and new."[16] The professional values of medicine provide a sense of continuity and can prepare us for the future because they endure. I would like to echo Osler's words in 1889 to the graduate class of the University of Pennsylvania when he asked them to develop imperturbability and equanimity.[16] "In the physician or surgeon no quality takes rank with imperturbability..... Imperturbability means coolness and presence of mind under all circumstances, calmness amidst storm, clearness of judgement in moments of grave peril." Osler pointed out that calm equanimity is very difficult to obtain. "One of the first essentials in securing a good natural equanimity is not to expect too much of the people amongst whom you dwell..... Curious odd compounds are these fellow creatures, at whose mercy you will be; full of fads and eccentricities, of whims and fancies."In times of tumultuous change today and tomorrow, maintaining a sense of imperturbability and equanimity will allow us to preserve the importance of professional values in education and patient care.

Conclusion

I wish to conclude by calling upon us as doctors and dentists to care for and about our patients. People perceive that medicine is moving away from its principal focus on caring and they don't like it. As technology and economics intrude so prominently into the innermost sanctum of medicine, the essential transaction between doctor and patient is threatened as never before. Patients feel short-changed by the hurried pace and brevity of their encounters with doctors. They see medicine coming under the influence of big business and turning to assembly-line, clock-punching methods. That is not what they want. What they want is to have their doctors back.

Commercialism views sick or could be sick people not as patients but as consumers and doctors as providers and

medical services as commodities. To care for our patients we need to defend medicine from the corrosive effects of commercialism and its failure to see beyond the cost containment dimension. Commercialism's fundamental flaw as a suitable paradigm for medicine is its motto—*caveat emptor* or buyer beware. Not trust, but wariness and suspicion. Medicine's response to commercialism must be the doctor's willingness to adhere to the altruistic canon of medical professionalism. No laws, no regulations, no patient's bill of rights, no fine print in insurance policy, no watch dog agency—nothing can substitute trustworthy doctors who care.

We must lead in the efforts to improve the health of the public. Pushing back the powerful forces of commercialism and putting one's trust in the tenets of professionalism require lots of courage. The stand we must take is not protection of the medical profession or defence of physician autonomy. The issue for doctors who care is the welfare of patients.

May the big rocks of the medical and dental professions be found in your jar of life. This will demonstrate that, despite the ever-increasing pace of technaology and the need for more services in the context of limited economic resources, we are the doctors who care.

Thank you.

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