Editorial

Redefining Medicine, Transforming Healthcare: The Lee Kong Chian School of Medicine

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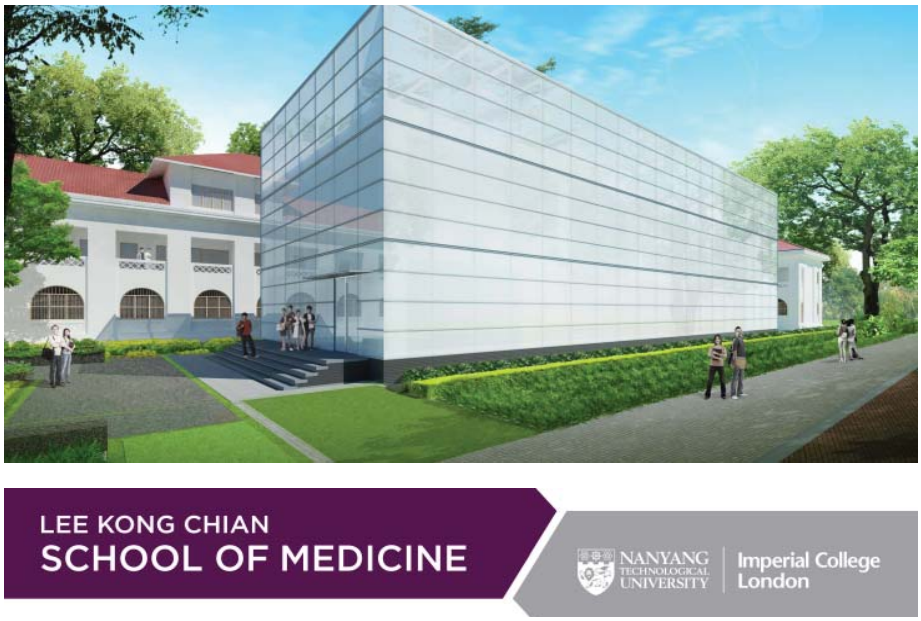

Fig. 1. A new medical school for Singapore: The Lee Kong Chian School of Medicine.

A brand new medical school offers the opportunity for us to stand back and think what a graduating doctor in 2018 will need to optimally handle the health burden faced at that time (Fig. 1.). The graduate needs to be fit for purpose and in developing the learning outcomes, we need to ensure that our graduates are also equipped to work in the system of healthcare likely to be operating at that time.

The collaboration agreement between Imperial College London and Nanyang Technology University, signed in October 2010, implied the translocation of the Imperial medical curriculum to Singapore with appropriate contextualisation. In reality, on arrival at that time in Singapore, appraisal of the healthcare situation, information gathering and extensive discussions with others led to the realisation that to merely relocate another course, albeit a highly successful and well respected course, to Singapore might represent a missed opportunity. To assist us in any redesign we were blessed with multiple recent reviews and learned editorials which continued to be published during the 2 or 3 years in which we have been designing our course.[1] But what is it that new doctors will need to tackle, what skills do they really need? How is medical education responding to a changing healthcare burden and how might Singapore's healthcare system change in the years prior to our first students graduation, and what should the impact of all of these factors be on our course?

The changing healthcare burden. Much has been written of the change in pattern of diseases from a predominance of communicable diseases to non-communicable diseases over the last 200 years, and most noticeably over the last 3 or 4 decades. In the 19th century, one was most likely to die of "fever, consumption, diarrhoea, syphilis, child birth or accident" and even 100 years ago, pneumonia, tuberculosis, gastrointestinal infections and even diphtheria represented over half of all causes of death. This shift in health burden from communicable to non-communicable diseases has increased recently but at different rates in different countries. In sub-Saharan Africa, communicable disease still represents the largest health burden and in some parts of Asia (e.g. Indo-Pakistan) health systems are

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suffering the double burden of a persisting high prevalence of infectious diseases co-existing with a large number of the new non-communicable diseases. Here in Singapore, as in many parts of north America, Western Europe and Australia, infectious diseases are still of great importance but they are numerically dominated by non-communicable diseases such that only one infectious disease (pneumonia) appears in the top 10 causes of health burden. However, it is not the change in type of disease i.e. infectious to non-infectious that is important, but the shift of health burden from acute illness to long-term conditions that has the greatest impact for healthcare systems and for medical education. Good acute healthcare remains a necessity both for acute need resulting from accidents but also because of infections and, because of acute exacerbations or complications of long-term diseases. However it is the change in healthcare which is needed for conditions with which one lives for 10, 20, 30 or 40 years such as diabetes, hypertension, depression, and chronic lung disease that merits a change in our practice.

These conditions require much more emphasis upon:

- Working in partnership with patients
- Enhancing compliance
- Motivating lifestyle changes
- Supporting self-care
- Providing convenient follow-up
- Working in teams

All too often neither medical education nor the structure of healthcare have embraced this need for a change in emphasis although it is an area blessed with good trial evidence in favour of need for this change. One simple example is to report the clear evidence that keeping patients with long-term conditions waiting in the clinic prior to review has an adverse effect on compliance and follow-up, and good randomised controlled trials of shared decision-making which involve only relatively minor changes in consultation style have been shown to alter health outcomes significantly 2 years after the intervention.[2] Further evidence exists for the benefits of team approaches to the follow-up of these conditions, to the use of more convenient follow-up, for example by telephone,[3] and even for the use of lay educators to support doctors and nurses in delivering high standard care to those with long-term conditions.[4]

In devising a new medical school course, an emphasis on these aspects needs to be built in to the course along with a realisation that over the next decade, healthcare is likely to become progressively less hospital centric, less doctor centric and more patient centric. Integrated care, namely the best possible care for the patient, delivered by the most suitable health professional, at the optimal time, in the most suitable setting is also likely to be more prevalent and our students need to experience and understand the importance of such approaches whilst undergraduates.

None of these new aspects detract from a medical students need to have a strong basic understanding of the science of medicine but the clinical relevance of that science needs to be drawn out for the students. As we move increasingly into an era where access to information is seemingly instantaneous, we need to ensure the right balance in a course of knowledge acquisition versus use of that knowledge. In the new 5-year MBBS programme at Lee Kong Chian School of Medicine (LKCMedicine) which leads to a joint Imperial College London/NTU degree, there is a major emphasis on enhancing the students' ability to utilise knowledge rather than a focus on its rote acquisition.[5] The traditional apprenticeship approach to medical education whilst in many respects admirable is often patchy and graduates will arrive at the patient's side as doctors with very variable clinical experience. Such variation is increasingly unacceptable both in terms of patient's safety and in terms of professional competence and comfort, and simulation can play a significant role here in ensuring that all students have had an exposure to some cardinal scenarios. Simulation of course means different things to different people and whilst widely used for communications training, at LKCMedicine this will be utilised in a wider context of integrated clinical practice with simulation being used for the acquisition of skills in communication, clinical methods and clinical skills, with hybrid simulation playing an important role. Increasing use of sequential simulation enables the students to see the whole patient journey, often condensed into a shorter time period, and replay scenarios and consultations in such a manner that one can see how different approaches lead to different outcomes. Such sequential simulation should not always represent acute or emergency scenarios and the potential for such simulation to aid the understanding of integrated care pathways or for giving all students a uniform approach to some difficult mental health issues cannot be underestimated.

Students entering medical school from Singapore do so with an understanding of science and mathematics which is amongst the highest in the world (and the Singaporean students' scores in our recent Biological Medical Admissions Test compared to those from elsewhere in the world are a credit to Singapore's educational system). However there is a danger that a highly developed understanding of science on entry to university can be diminished rather than enhanced during a medical school course and this needs to be addressed if sufficient clinician-scientists are to be available in the future. Our role in the medical school is to produce pluri-potential graduates who could be the best possible family physicians or equally might choose to work both as a doctor and as a scientist. A new course needs to

ensure that the excitement of discovery and inquisitiveness is maintained. In our course, the students will thus undertake a practical laboratory session every week in the first 2 years, be exposed to an innovations in medicine course designed to remind students that those other than doctors often find solutions to medical problems, and have the opportunity to choose themselves, with their house tutor's advice, how to use a sizable number of student choice sessions during Years 3, 4 and 5.

If the new medical school course has imperfections, (and it is bound to have some) one can be sure that everyone will hear about it within a nanosecond! Nevertheless whether we have really produced the first class medical school we hope that we have will not be known with certainty for years. I believe very strongly that a good medical school values equally scientific research and medical education and neither can be satisfactorily undertaken unless one has excellent relations between the medical school and its clinical partners. In our minds, we have redefined medicine and have a clear vision as to how healthcare needs to be transformed but at the end of the day what we really need to produce are "doctors of the type that you and I would wish to have caring for us".

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