Should Singapore have a Second Medical School?

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Abstract

The case for establishing a second medical school in Singapore is strong. Given the recent explosive advances in medicine and biology, Singapore has identified the life sciences as an area of great economic potential, and aspires to become a regional "medical hub" capable of achieving excellence in healthcare, medical education and biomedical research. The existing medical faculty at the National University of Singapore is currently taking in 230 students per year, creating a very heavy teaching load which, coupled with even heavier clinical duties, makes it extraordinarily difficult for staff members to derive professional satisfaction and to pursue research interests. Creating a second medical school will alleviate some of these problems, which have contributed in no small way to the exodus of experienced clinicians and teachers to the private sector. Perhaps more importantly, having a second medical school will permit direct comparisons of the relative merits of different approaches to medical education, healthcare, and administrative practices. This in turn should lead to improvements in all these areas, thereby creating working environments more likely to satisfy staff aspirations, improve medical education and enhance research. Concerns about possible "unhealthy competition" and "costly duplication" with the establishment of a second medical school are largely unfounded if resources are managed appropriately.

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Introduction

Singapore has had only one medical school since 1905. This medical school, the Medical Faculty in the National University of Singapore (NUS), currently takes in about 230 students each year and its primary task is to train physicians for the entire nation. The NUS Medical Faculty is also involved in substantial biomedical research and, together with the existing research institutes, helps in the training of biomedical research manpower for the country.

Given the recent explosive advances in medicine and biology, Singapore, like many other countries, has identified the life sciences as an area of great potential economic importance, soon to become a major engine for economic growth. Furthermore, Singapore aspires to attain a commanding lead as the regional "medical hub", providing high-quality healthcare not only for its own population but also for the surrounding countries. Moreover, Singapore wants to achieve excellence (or world-class standing) in at least some areas of biomedical research, since this is necessary for becoming globally competitive and for capitalising on the economic potential of life sciences research.

Against this background, a legitimate question to ask at this juncture of Singapore's development is whether the establishment of a second medical school would enhance her potential of becoming a successful medical hub for the region and of achieving excellence in biomedical research for the economic benefit of the country. Rephrased, the question could be: "*Will the establishment of a second medical school increase Singapore's competitiveness in medicine and in the life sciences?*"

The answer to this question must necessarily take into account:

- the current and future needs of the nation in producing physicians for our own population and for achieving our aspiration to be the premier regional medical hub;

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- the need to train research manpower in order to achieve international standing in some areas of biomedical research;
- the resources, both human and material, that need to be mobilised or acquired.

Quantitative information is needed to address some of these points. Without such information, the need for a second medical school can only be considered qualitatively.

The Case for a Second Medical School

The rationale for the establishment of a second medical school can be summarised under the following headings:

Having two medical schools and allowing them to "pace" each other will lead to improvements in medical education, healthcare, and possibly research.

In almost every sphere of human activity, improvements and changes are brought about most rapidly when immediate comparisons are possible. Medicine is no exception. Having two medical schools will allow them to "pace" each other in all aspects of their activities, from administration to teaching, from research to patient care. If one institution discovers a superior way of doing things, the other can learn (or will be forced to learn) from it very rapidly. Such improvements are far less likely if there is only one medical school because lack of direct comparison often precludes the ability to even identify problems in the first place. This is especially true in our institutions, where people are often reluctant to voice their concerns openly.

There are numerous instances, both here and abroad, where the introduction of "competition" has rapidly led to vast improvements in efficiency and productivity. The great benefits of dismantling a monopolistic telecommunications service by opening the market to other service providers should be obvious to all.

Two medical schools will allow "parallel evolution" in a controlled environment, accelerating positive changes.

The world of medicine is changing rapidly. Many medical schools are uncertain how best to respond to these changes. A case in point is the approach to medical education. There is now a trend to move away from traditional subject-based didactic teaching (in which students are given factual information during lectures to be mastered for examinations) to problem-based learning (in which students are presented with clinical problems to understand and solve, not only providing clinical education in the short term but also equipping students with skills and attitudes for lifelong self-directed learning). After several reviews of the undergraduate medical curriculum, the NUS Medical Faculty has adopted a "hybrid" system in which both didactic and problem-based approaches are simultaneously used, largely because of the fear that, as Singapore's only medical school, it cannot afford to make any mistakes in the training of doctors. This conservative approach is likely to retard development in medical education and training.

Having two medical schools provides greater flexibility that will enable us to innovate with less trepidation, accelerating positive changes. For example, in the matter of medical education, if one school uses traditional didactic teaching while the other adopts problem-based learning, it will soon be evident, in the controlled environment of Singapore, which approach is superior or if both have equal merit. The same considerations also apply to other medical school operations. In this regard, Singapore has a special advantage over other countries where conditions are less homogeneous and direct comparisons are more difficult to make between the outcomes of different courses of action. The parallel evolution of two medical schools will not only help us optimise our operations more rapidly, but will provide opportunities for innovation.

Two medical schools will provide a choice of different working environments.

Over the years, many excellent clinicians and teachers have left the NUS Medical Faculty, and this has been a significant loss to medical education. Although such departures are generally attributed to monetary considerations, it is equally true that many left because they felt unable to work productively in a particular environment. If a second medical school had existed as a viable alternative, it is likely that many of these individuals would have stayed to contribute to medical education, an activity whose value to the community far exceeds that of patient care alone. With a second medical school as an option, staff will segregate themselves according to their preferred working environment. This will have several salutary effects.

First, morale will be higher because staff can choose the working environment that more closely matches their needs and temperaments. Second, each medical school's administration is likely to be more responsive to suggestions for change, recognising that their staff (and students) do have a choice. The awareness that talented staff need no longer tolerate a poor working environment should prevent complacency. Consequently, the leadership and administration of each medical school will have a powerful incentive to constantly improve the professional and intellectual working environment in their respective institutions. Productivity is likely to increase because people are happier. With only one medical school in the country, the options for talented but unhappy staff are limited, namely (i) to stay on and remain unhappy, (ii) leave for private practice, or (iii) emigrate to another country. All these options are undesirable for those who could contribute much to medical education or research in Singapore.

Having a second medical school will be beneficial to the existing medical school at the National University of Singapore (NUS).

There is a perception that the establishment of a second medical school will be detrimental to the existing medical school in the NUS. This notion requires closer examination. The point has been made that resources will be diverted from the NUS Medical Faculty and that this will diminish its ability to achieve world-class standing. In fact, the likely scenario may be exactly the opposite. The reasons are not difficult to discern.

The NUS Medical Faculty currently accepts some 230 students each year. If this level of intake is maintained, the staff of the faculty will have the responsibility of teaching some 1150 students at any one time. Even with help from the restructured hospitals, this large student population represents an extremely heavy teaching load. Only a small minority of medical schools in the world has more than 200 students per class and, in these schools, the staff/student ratios tend to be much better than that of NUS. A cursory survey among the NUS Medical Faculty staff members will confirm that serious research has become extremely difficult in recent years because of very heavy teaching and service commitments. The constant exodus of staff from the Medical Faculty for the private sector further increases the teaching and service loads of those who remain, making attempts at serious research appallingly difficult. People working in academia expect to derive a large part of their professional satisfaction from scholarly activities. When this is not possible, people leave. These problems require urgent solutions, which may come with the formation of a second medical school.

Sharing the training of medical students with a second medical school would almost certainly reduce the teaching and service loads of each staff member in the NUS Medical Faculty. This may break the vicious cycle alluded to above and will, in all probability, help the NUS Medical Faculty achieve a higher academic standing among medical schools worldwide.

Having a second medical school will improve participation of non-NUS physicians in medical education and research.

Currently, the vast majority of physicians working the public sector are involved in providing healthcare but not in medical education or research. Many of these physicians would be happy to participate in the training of the next generation of doctors or in medical research. For a variety of reasons, however, joining the NUS Medical Faculty to achieve these goals does not seem an attractive proposition. Having a second medical school, especially if it turns out to have a more attractive working environment, will provide a real opportunity for the more academically inclined physicians in the public sector to engage in scholarly activities. This is in the national interest because it will almost certainly raise the standards of medical education and healthcare over the longer term.

Responses to Objections against the Establishment of a Second Medical School

Various objections have been raised against the formation of a second medical school. Some of these appear to be cogent, at least superficially, and need to be addressed.

Objection 1. Singapore is a small country with limited resources. Let us not compete among ourselves and dilute our resources. We should, instead, compete with the rest of the world.

Response: This issue becomes confused if one "lumps" all forms of competition together and calls them "unhealthy" because they "dilute our resources". In some areas, competition is inevitable and good; in others it may be impossible or meaningless. We need to consider 3 areas separately.

First, consider medical education. Here, competition among ourselves cannot be bad. For the reasons given above, having two medical schools that teach students in different ways will most probably improve the overall quality of medical education in Singapore. Each school will try to outperform the other by producing graduates who are better than the other group not only in examination performance but also in clinical competence. Such competition is clearly in the national interest, should not be considered "unhealthy", and need not split our resources in any detrimental way. In comparison, it is difficult to envisage any form of meaningful "international competition" in medical education that Singapore can embark upon at present.

Second, consider clinical service. In this area, whether we like it or not, we are already competing among ourselves. The clinical reputation of individual physicians (and institutions) is determined by their clinical expertise, which is fairly well known to the local population. Such competition cannot be avoided, and it is not detrimental. Also, increasingly, we are facing competition from surrounding countries in this arena, something not entirely within our control. In both instances, however, the competition can and should be harnessed to enhance our clinical skills and reputation.

Third, consider medical research. This is the area where international competition is the only meaningful form of competition since research is always judged internationally. In research, one could make a case for minimising local competition (and maximising local collaboration) in order

to enhance our international competitiveness. However in this connection, researchers will sort things out among themselves and no directive from the top is required or likely to work. Having one or two medical schools is not a major factor in determining the likelihood of our success or otherwise in the research arena. Other factors, such as research training, funding, administrative and infrastructural support, time for research, freedom from bureaucratic controls, the presence of a vigorous research culture and enlightened leadership are more critical for success. Critical mass is also important, but having another medical school in the country will not affect the required critical mass of researchers. Singapore is a small country in which collaboration with other researchers is easy – if it is perceived to be mutually beneficial (and is already happening, often across institutional lines).

Objection 2. There will be "fragmentation" in the teaching of medical students.

The point has been made that medical students now rotate to many teaching hospitals in Singapore and thereby gain a comprehensive experience from many teaching units all over the country. With the establishment of the two clinical "clusters" of hospitals (each cluster having one medical school), students are likely to receive fragmentary and inferior teaching, since their exposure is restricted to only one of the two clinical "clusters".

Response: There is no basis for such fears. The teaching resources in Singapore remain the same with either one or two medical schools. If each of the two "clusters" is self-sufficient with respect to teaching resources, there may not be any need for students to rotate outside their own cluster. However, if a particular subspecialty, for example neurology, is not available in one cluster, there is no rational reason why students should not be able to go to the other cluster for a neurology rotation. Both medical schools should have total access to all teaching facilities in Singapore should their students require them.

Objection 3. It is too costly to set up another medical school. And there will be wasteful duplication.

Response: A common mistaken notion is that it is very costly and wasteful to have a second medical school because of the need to duplicate the pre-clinical and para-clinical academic departments. This is really not necessary. First, the nature of medical education has changed radically in recent years, most medical schools having phased out the traditional "practical classes". There is therefore no need to build additional laboratories just for medical students. Second, if the new medical school adopts the problem-based approach in teaching, there is little need for entire non-clinical departments to be duplicated. (To buttress this argument, it would be ideal to have figures based on the actual costs of a medical school which adopts the problem-based learning approach.)

Objection 4. Singapore is too small to accommodate two medical schools at present.

Response: The question of size is a difficult one to address since there are no objective quantitative and qualitative measures to indicate when a single medical school becomes suboptimal for a given population. Nevertheless, as we aspire to be a regional medical hub, the population we serve is considerably larger than the 4 million Singapore residents. Moreover, we are already taking in some 230 medical students each year, a large number by any criterion. The question we need to answer is, given these conditions, will Singapore be better off having two medical schools instead of one? The combination of high student enrolment and a large regional population should provide additional cogent justification for the establishment of another medical school in Singapore.

Conclusions

The case for establishing a second medical school is strong. It will pace the existing medical school, leading to accelerated improvements in medical education, healthcare delivery and enhanced conditions for professional development. These events will in turn staunch the chronic loss of intellectual capital from publicly funded medical centres, greatly facilitating research productivity in medicine and in the life sciences. The establishment of a second medical school is a relatively small but highly strategic national investment that could create considerable synergy for Singapore's knowledge economy. It will moreover place Singapore in a strong position to capitalise on the huge economic potential of life sciences research.