Medical education: the case for investment

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Main text

"The lot of our own medical students is, from a financial standpoint, not a bed of roses, and I have personal recollections of existence for over three years on a diet of cocoa and dry bread, with an occasional kipper for variety, in order to save enough money to pay my hospital fees."
Vincent Norman 1938 (1)

It is worth considering to what degree the lot of medical students has improved since Vincent Norman reflected on his days as a student. While diet may have got better, there are clear parallels between the medical student in the first half of the last century who had to pay hospital fees and the student of today who must take out a loan to pay for tuition. In this regard I should declare my own interest. Over the past five years I have spent much time analysing the costs of various forms of medical education and evaluating their effectiveness, benefits or utility (2).

The purpose of this work has been to discover more efficient forms of education and to ensure that individuals and institutions that bear the costs of medical education get the best possible outcomes. Some progress has been made but there is still much work to be done. The purpose of this article however is not to review this work but rather to look at the field from a strategic point of view. There is no question that tactical efficiencies can be made in the delivery of medical education; however such efficiencies will at best result in savings that are a proportion of our total investments. The wider strategic question is whether our current investments in medical education are sufficient. Answers to this question are likely to have a much greater effect on our investments in medical education as a whole and on the outcomes of such investments. So are we spending enough on medical education? The short answer is that it is unlikely that we are. But behind every short answer there is also a long answer - this one takes account of contingencies and probabilities. Let's have a look at the long answer in detail.

According to the Lancet Commission, the total worldwide spend on the education of healthcare professionals is approximately $100 billion per year (3). This accounts for "less than 2% of health expenditures worldwide" (3) Who is doing this spending and what are we getting in return? The majority of the spend on undergraduate education comes from national governments (via ministries of education). Some countries have substantial numbers of private medical schools (in their case the spend comes from the students themselves or their families. The majority of the spend on postgraduate training comes from national governments (via ministries of health). Finally in the case of continuing professional development, the source of the spend is more diverse. Some comes from ministries of health, some is paid for by the learners themselves, and some comes from commercial sponsors. In terms of return for this spend, we should get competent healthcare professionals who are fit to meet population health needs – the extent to which we do however varies from country to country.

How does this spend of $100 billion per year compare with other industries? There is no exact comparison but a number of analogies can be drawn. The average spending on general education as a percentage of a country's gross domestic product (GDP) is 4.9% (4). Of 132 countries for which statistics are available, only eight spend 2% or less than their GDP on education (4). Some might say that that this is not a fair comparison and that there is a need to have common denominators that have more in common when comparing percentage spends on medical education and education. However

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valid comparisons can be made between spends on medical education and on education generally. The total economy of healthcare may be represented by our spend on healthcare (and spend on health professionals' education should be a percentage of that); similarly the total economy of a country may be represented by its GDP (and spend on general education should be a percentage of that). Another comparison might be the amount spent on health education, compared with overall amounts spent on education – however the amounts spent on health education are not readily available. How does this relate to Africa? Well it is unlikely to relate to the continent as a whole, but rather may be related to each individual country on a case by case basis. Some countries in Africa might have a healthy GDP and might spend a good percentage of their GDP on healthcare and on healthcare professional education. Some might not. However all should reflect on these percentages within their own countries.

In private industry, it is much more difficult to get figures. Human resources directors may urge companies to spend 5% of their income on training but the reality is that most spend less than this – even though, because such data is commercially sensitive, it is impossible to get actual numbers. However most directors of private companies say that the amount to be spent on staff education depends on the type of industry that you are in and what you are trying to achieve. Industries that will need most investment on education are those that are dependent on people and that are subject to continuous change. This describes the heathcare industry exactly. It would be insightful to contrast the spend on healthcare professionals' education with the spend on the education of other professions – however numbers for comparative spends are simply not available.

The average spend on undergraduate education per graduate doctor is $122 000. Yet the spend per graduate doctor in China, India, and Africa is considerably less than this average. So one caveat to the answer that we spend less than we should on medical education is that it depends on what country we are talking about. Certainly the spend in China is likely to be far too low (3). Once again Africa cannot be looked at as a single entity. The average spend on undergraduate education per graduate doctor in North Africa is $113 000; the average spend in sub-Saharan Africa is $52 000. Another point of comparison is other products and services that we spend public funds on. Here the potential comparisons are endless. Annual global military expenditure is $1700 billion – 17 times the sums spent on health professionals' education (5). Spending on information technology is $3600 billion per annum (6). Critics might say that this involves medical educationalists in areas where they are not experts – that is, in politics. However we cannot remain above the fray of politics if we are to get what we need (7). According to Nordquist and Grigsby, politics "can be understood as the distribution and allocation of scarce resources" (7). With this in mind there is no way that we cannot be involved. We must make the argument that, compared to other areas of public expenditure, the spend on healthcare professionals' education is modest – and that it is not fair that we are being asked to tighten our belts in such circumstances. Once again each individual country should look at its own spending priorities and consider how these priorities reflect population needs.

Another reason for increased investment is to generate economies of scale (8). Put simply the cost per graduate doctor produced might be less if we invest more - as there may be economies of scale. Economies of scale may result from a number of different factors. A bigger medical school may be able to bulk buy equipment and thus save on purchasing costs or it may be able to use its increased budget imaginatively by investing in information technology and enabling more of the curriculum to be delivered online. The increased work at the school may enable the staff to learn new, better and faster ways of doing things – thus increased efficiency may result. However there are many reasons to believe that attempts to drive economies of scale might adversely affect quality and become counter-productive. Such reasons might include the need to invest more on management and communication, and the fact that medical learners are individuals and not items that can be produced in a factory. Lastly there is growing evidence that the availability of more senior doctors in the delivery of care is directly related to reduced mortality (9). Only through education will we be able to produce more senior doctors which will then have an effect on patient outcomes.

On a final note the worldwide recession is commonly cited as a reason why we must save costs. Yet consensus is emerging that spending cuts are not the way to help recovery – on the contrary investment is likely to be the best route out. We must make the case for investment in medical education. Indeed we must make the case regardless of the state of the economy in individual

countries. The growing interest is cost analyses in medical education must not be used as a means of cutting back on medical education but rather for making the case for increased investment.

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Kieran Walsh has written a book on cost and value in medical education.

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