*Round Table Discussion*

# *The Role of Public and Private Sector In Manpower Production: A Debate*

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## *1. Introduction*

This paper aims at promoting discussion on the role of the public and private sectors in university education. Privatisation direction circumscribed by civil service reform and structural adjustment in several countries prompts researchers and policy makers to look seriously into how to improve efficiency and quality of manpower production while trying to achieve social equity. To what extent the private sector has a role to play in financing and producing manpower and how the governments should react in the transition period is discussed. Special emphasis is made for health manpower issue.

## *2. Civil service reform*

In the past decade, favourable economic and private sector growth, coupled with bureaucratic inefficiencies, prompted many governments to reconsider the role of the public and private sectors in the production and distribution of goods and services. Recently, the Thai government took a very bold step in public sector reform by advocating the target of "lean but efficient government". Before 1994, the government adopted a policy of two percent public employee growth. For the last few years, several studies have been carried out to support this direction.

In February 1994, the Cabinet endorsed the Civil Service Commission's proposal on "The Public Sector Manpower Policy" and promulgated a Cabinet Resolution stating clearly that every government Department must revise its primary mandate[1]. Activities must be prioritised, unnecessary work curtailed. The Resolution proposed a privatisation mechanism such as contracting out to the private sector, franchising, lifting of tuition fee controls in private colleges, etc. The private sector's role in the provision of health services and education are particularly mentioned by the Resolution.

According to the Resolution, by the end of the Seventh Five-Year National Economic and Social Development Plan (1992-96), the total number of public employees must not exceed the level as of February 1994 (1.85 million or 3.3% of total population). Moreover, termination of one post for each retirement during this period was strongly endorsed, namely there would be around 18,000 posts terminated by the end of 1996. New recruits are strictly contained with some very limited exceptions (such as posts for government fellowship students). This means a zero or even a negative growth of public sector employees. Reallocation of posts among Divisions in a Department and between Departments was also advocated. A central body for manpower management, whereby the Civil Service Commission is the secretariat, was endorsed to implement the Resolution.

How much does it cost to employ an extra civil servant? The Civil Service Commission[1] estimated the staff cost for a life time, on 37

Table 1 Cost of an extra civil servant (Baht)

| Year employed | Annual salary | Medical benefit | Total | Present value |
|---|---|---|---|---|
| 1st | 66,720 | 2,668 | 69,388 | 69,388 |
| 2nd | 72,058 | 2,954 | 75,012 | 71,439 |
| 3rd | 77,822 | 3,268 | 81,090 | 73,551 |
| . | . | . | . | . |
| . | . | . | . | . |
| 37th | 1,065,396 | 80,970 | 1,146,366 | 197,928 |
| Total | 13,548,852 | 891,192 | 14,440,044 | 4,549,090 |
| Pension | 3,284,972 | - | - | - |
| Grand Total | 16,833,824 | 891,192 | 17,725,016 | 5,116,265 |

Source : Civil Service Commission 1994

Notes : Several assumptions were used : New recruit of a bachelor degree at the age of 23 years old, 8% annual salary increase. Medical benefit takes 4% of the annual salary with a 0.1% increase per annum. Discount rate of 5% was used for the adjustment of present value. Pension is last month salary multiplied by 37 years.

years employment, at 17.7 million Baht (5.1 million Baht net present value) including pension and medical benefits, as shown in **Table 1.**

We believe that staff costs in Table 1 tend to be under-estimated, as medical fringe benefits have gone up in real terms 21% per annum[2] and constitute a substantial portion of staff costs. The medical benefit scheme generously covers parents, spouse and up to three children under 20 years of age.

The very secure and almost life time employment together with a weak performance monitoring and evaluation system lead to system inertia, non-responsiveness and low productivity among government employees.

According to the National Statistics Office Government Official Living Standard Surveys,[3,4] job security and generous medical fringe benefits are among the first two reasons for entry and retention in the public services eventhough the public remuneration scale is lower than the private scale. Public Sector Reform direction is then centred around government efficiency and increased private sector role.

Figures from the Budget Bureau showed that salaries and wages, excluding fringe benefits took almost one-third of the annual budget during fiscal years 1984 to 1993[5]. High staff costs and lower productivity are among important justifications for Public Sector Reform.

Although the Resolution strongly challenges the bureaucratic-empire-building concept, we believe that it has a major thrust on the privatisation of the public sector. Little is known about the privatising mechanism, especially in manpower production.

## 3. State of the Art

*"...The education system has both efficiency and equity objectives. Efficiency requires the adoption of a system that maximises net social benefits - that is, the greatest possible excess of benefits over costs. These benefits take two main forms: production benefits concerned with training the future work force, and a more diffuse range of social benefits (externalities). The equity objective requires the establishment of equality of access or the guarantee of a minimum standard in education."* Le Grand et al[11]

Table 2 Number of graduates during 1992-1996 by source of production

| Categories | Public Universities | | | | | Private Universities / Colleges | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1992 | 1993 | 1994 | 1995 | 1996 | 1992 | 1993 | 1994 | 1995 | 1996 |
| 1. Medicine | 837 | 816 | 826 | 825 | 848 | 0 | 0 | 32 | 20 | 30 |
| 2. Nursing | 3,139 | 3,355 | 3,134 | 3,136 | 3,037 | 295 | 335 | 322 | 332 | 356 |
| 3. Pharmacy | 471 | 470 | 623 | 602 | 808 | 28 | 78 | 45 | 101 | 92 |
| 4. Dentistry | 289 | 311 | 340 | 351 | 317 | 0 | 0 | 0 | 0 | 0 |
| 5. Medical technology | 245 | 261 | 313 | 295 | 313 | 48 | 30 | 29 | 18 | 20 |
| 6. Rehabilitation | 88 | 86 | 177 | 99 | 121 | 30 | 37 | 34 | 24 | 13 |
| 7. Public Health | 2,233 | 2,245 | 2,230 | 2,332 | 2,300 | 0 | 0 | 0 | 0 | 0 |

Source : Wibulpolprasert et al (1997)

As shown in Table 2, Wibulpolprasert et al[6] demonstrated that public universities and colleges have a lion's share in the production of health manpower graduates. Private universities and colleges play an insignificant role except for the case of nursing graduates. Private non-profit foundations such as Seventh Day Adventist, Chinese Overseas Foundation and Christian Church of Thailand play a significant role in nursing production.

Table 3 estimates a figure of 1.8 million Baht to train a medical graduate in public university, slightly lower for a dentist (1.6 million Baht). For the cost of production of one medical doctor, the government could produce twice as many pharmacists and eleven as many nurses.

Government universities are heavily subsidised by general tax revenues, as tuition fees and direct private costs borne by the trainee play a minute role. Table 4 demonstrates personal costs borne by trainees is a small fraction, average 6.8% of the government operating budget. This proportion is highest, 19.2%, among universities that mainly produce social science graduates such as Thammasat and Prasanmitr University, as cost of production is lowest. In contrast, a similar tuition fee rate was charged to trainees in medicine and health related categories in Mahidol University where cost of production is highest. This makes the lowest (2.1%) proportion of personal costs to government operating costs of production. Medical students paid a sum of 10,000 Baht for annual tuition fees in public university whereas total cost of production was 300,000 Baht. Private university medical students paid a full fee of 250,000 Baht per annum. It could be said that cost of production of health manpower was borne by the tax payers.

Table 3 Estimation of production cost per university graduate (Baht).

| Courses | Public institutions | Private institutions |
|---|---|---|
| Medicine | 1,800,000 | 1,600,000 |
| Dentistry | 1,620,000 | - |
| Pharmacy | 900,000 | 299,000 |
| Nursing | 160,000 | 210,000 |

Source : Wibulpolprasert et al (1997)

Table 4 Tuition fee and other direct private expenditure as percent of government budget subsidy

| | Tuition fee as % government operating cost |
|---|---|
| All government universities | 6.8 |
| Lowest (Mahidol U) | 2.1 |
| Highest (Thammasat and Prasanmitr U) | 19.2 |

Source : National Education Council 1985

Tangcharoensathien et al[7] estimate the cost of nursing production in the 23 MOPH Nursing Colleges in fiscal years 1990 to 1992. The total cost was 17,954 Baht per student per year during this period, consisting of labour costs 53%, material costs 43% and capital depreciation 4%. Tuition fees are 9.7% of the total costs of production and the budget subsidy is 90.3%. The instructor student ratio is too low at 1:13 as compared to the standard set by Ministry of University Affairs of 1:8. Inadequate budget, high teaching load and little opportunity for staff development are among factors for lower quality nursing outputs. Another study by Wibulpolprasert et al[8] estimates costs of production for three categories of paramedics, namely rural health workers, dental nurses and pharmacist assistants in the MOPH Khon Kaen Public Health College. They found that the tuition fees borne by students were a very small fraction of the total costs of production of the above three categories, i.e. 3.7%, 2.0% and 4.0%

Table 5 Tuition fee and other private expenditures as percent of parents' annual income (Baht)

| | Annual income | Tuition fee | Percent |
|---|---|---|---|
| All government universities | 134,364 | 3,328 | 2.5 |
| Lowest (Thammasat University) | 155,505 | 2,455 | 1.6 |
| Highest (Institute of Technology) | 97,774 | 6,103 | 6.2 |

Source : National Education Council 1985

Tuition fees and other trainee private costs play a minor fraction of household income as shown in **Table 5**, from a study done by National Education Council[9]. On average, private costs for a university education was 2.5% of the parents' annual income, ranging from 1.6% for Thammasat to 6.2% for the Institute of Technology. This reflects financial affordability if the fee is to be raised.

University student social status as reflected by father's occupation is shown in **Table 6.** Fathers are commonly employed in business and civil service. Fathers who are farmers are in the minority except for students who study agriculture. Further, university student economic status as reflected by paternal average monthly income in **Table 7** shows that they are in the higher economic band compared to general Thai who are farmers and labourers. Private university students came from the highest economic band, with income differential is evident at the magnitude of 6.5 fold to the general Thai population.

From the above analysis, it could be said that university students generally come from higher socio-economic strata but the society

Table 6 Percent distribution of the occupation of university student's fathers

| Category | Business | Civil servant | Farmer | Other |
|---|---|---|---|---|
| Science | 47 | 23 | 11 | 19 |
| Agriculture | 41 | 24 | 19 | 16 |
| Medicine | 55 | 18 | 7 | 21 |
| Commerce | 57 | 20 | 3 | 20 |
| Engineer | 54 | 17 | 10 | 19 |

Source : National Education Council 1985

Table 7 Average monthly earning of fathers of students in universities compared with general population, Thailand.

| | Average monthly income (Baht) |
|---|---|
| Father of government university student | 11,197 |
| Father of private university student | 15,477 |
| National Thai average | 2,380 |
| Thai Farmer | 578 |
| Thai labourer | 1,362 |

Source : National Education Council 1985

bears nearly the sole cost of production. It is more convincing if we look closely at benefit yield to graduates in comparison to the society as a whole. The Education Council[10] produced fertile evidence on cost and benefit of tertiary education in Thailand. Benefits were measured in terms of economic and other social external benefits (externalities) to the society and to the graduates themselves (private benefit).

Private return was compared between high school and university graduates. It was calculated using post tax earnings in a 46 year life time employment period (between 23 to 65 years old) for a university graduate and direct personal costs at the university level plus opportunity costs of studying in the university (earning foregone for high school graduates). These were adjusted by age-earning profile, unemployment rate and attrition rate from university. The unit of private rate of return is percent per annum.

Social rate of (economics) return was compared again between high school and university graduates. It was calculated based on the same principle of private rate of return, but used pre-tax instead of post-tax earnings. The unit of social rate of return is percent per annum.

Table 8 shows a consistent pattern that private rate of return is higher than social rate of return; 16.43% versus 8.84% for overall graduates. State enterprise employees received the highest private rate of return, 23.76% and government employees had the lowest, 16.74%. Note that there is a significant sex differential on private rate of return, biased against females. The average social rate of return was 8.84%, ranging from 8.03% to 12.98%. The gap of private and social rate of return ranges between 8% to 11%. Thus, the greater the gap, the more benefit gained privately to graduates and the less gained to society. The gap is determined by

Table 8 Social and private rate of economic return (% per year) from investment in University Education, Thailand 1985

| Employment | Male | Female | Both |
|---|---|---|---|
| All types of employment | | | |
| Social rate of return | 10.67 | 6.47 | 8.84 |
| Private rate of return | 19.89 | 13.29 | 16.43 |
| 1. Government services | | | |
| Social rate of return | - | - | 8.03 |
| Private rate of return | 19.63 | 15.13 | 16.74 |
| 2. State enterprise | | | |
| Social rate of return | - | - | 12.98 |
| Private rate of return | 25.33 | 21.86 | 23.76 |
| 3. Private | | | |
| Social rate of return | 13.86 | 8.44 | 11.40 |
| Private rate of return | 25.60 | 17.70 | 21.52 |

Source : National Education Council 1985

cost of manpower production (borne by the society and the household) and income generated from employment opportunities. We believe that apart from being a university graduate, there are other factors besides personal income, such as parent's wealth and post-graduate training.

Private rate of return in this study[10] is consistent with Le Grand et al[11] that post tax private rate of return on a university degree in Britain was between 18 and 24 percent, clearly a much higher return than could be obtained on almost any other form of investment. The private rate of return of around 17% has been estimated in the US.

We argue that the social rate of return above[10] is under-estimated for medical doctors, nurses, pharmacists and dental doctors. Since 1971, the Thai Government introduced a compulsory three year rural services (mainly in district hospitals) for all medical graduates and subsequently for dentists and pharmacists. Each nursing student in the MOPH Nursing Colleges were designated where to work for since the first year. These health professionals posted in most remote rural areas filled up the gap of social inequity, facilitating access to professional care among the rural poor. They are the pioneers in the history of primary health care and district health system establishment in Thailand.

Table 9 Social and private rates of economic return (% per year) by category of university training assumed 43 years of employment

| Category | Total | | civil servant | | state enterprise | | private | |
|---|---|---|---|---|---|---|---|---|
| | social | private | social | private | social | private | social | private |
| Science | 7.5 | 17.6 | 6.9 | 18.4 | 10.6 | 24.5 | 11.4 | 26.0 |
| Agriculture | 8.1 | 19.5 | 6.5 | 17.7 | 9.0 | 20.7 | 15.8 | 33.7 |
| Medicine | 4.5 | 15.4 | 6.0 | 27.7 | 6.0 | 22.3 | 7.8 | 24.0 |
| Commerce | 11.8 | 15.8 | 9.3 | 15.1 | 15.4 | 20.5 | 14.8 | 20.5 |
| Engineer | 10.7 | 23.5 | 9.2 | 22.3 | 13.4 | 28.8 | 17.1 | 34.8 |

Source : National Education Council 1985

The two rates presented in Table 9 compare five selected categories of graduates in three sectors of employment. The gap of private and social rate of return was more evident among medical doctors (16% to 22%) and engineers (13% to 18%). This means that for investment in tertiary education, the society received less and the graduate got more. The study proves that social contributions (in terms of political, social, religious aspect) were higher among university than high school graduates, but the magnitude is not significant. The study also estimates that the government heavily subsidised up to 88% to 93% of the total cost of tertiary education, despite the fact that private gain was higher than social return, and that university trainees came from the higher socio-economic band of the society. The study[10] concludes *"... this frankly demonstrates the inequity and inefficiency in managing and financing tertiary education in Thailand..."*.

Unfortunately as shown in Table 10, medicine, medical technology and engineering were categorised into the column of lower social rate of return for both economic and social contributions in various domains. Graduates falling under the low social rate of return comprise the major area for university education reform.

Table 10 Social rate of return in terms of economics and social

| Social rate of return | high | low |
|---|---|---|
| 1. Economic return | **Civil servant:** fine arts, architecture, commerce, humanities.<br>**State enterprises:** fine arts, architecture, commerce, humanities.<br>**Private:** engineering, agriculture, commerce. | **Civil servant:** medical technology medicine, agriculture.<br>**State enterprises:** medicine, agriculture, education.<br>**Private:** medical technology, medicine, education. |
| 2. Social | | |
| • political aspect | • Sociology and humanities | • medicine |
| • religious aspect | • - | • science, commerce |
| • social aspect | • medical technology | • - |
| • total | • - | • engineering |

Source : National Education Council 1989

Table 11 Social rate of economic return (% per year), selected training categories

| Countries | Science | Agriculture | Medicine | Commerce | Engineer |
|---|---|---|---|---|---|
| Thailand | 7.5 | 8.1 | 4.5 | 11.8 | 10.7 |
| Philippines | - | 3.0 | - | 10.5 | 10.3 |
| Malaysia | - | 9.8 | 12.4 | - | 13.4 |
| Brazil | - | 5.2 | 11.9 | - | 17.3 |
| England | 11.0 | - | - | - | 11.4 |
| Sweden | - | - | 13.0 | 9.0 | 7.5 |
| Developing | 14.2 | 8.0 | 12.0 | 15.0 | 15.2 |
| Developed | 9.4 | 2.2 | 8.2 | 10.3 | 7.5 |

Source : National Education Council 1985

Social rate of return from investment in university education, comparing Thailand with other countries is shown in **Table 11.** Social yield from investment in physician production is the least, 4.5% per year, compared with 12% in other developing countries.

**The study strongly advocates reduction of government subsidy and increase in tuition fees (reflecting true cost) to tertiary education run by government universities as well as a greater role for private universities. This should lower the private and increase the social rate of return. Grants and loans to the poor students who could not afford the tuition fee is automatically proposed.**

## *4. Are students in health sciences really subsidized by the Government?*

As evident from the above analysis, it is customary, in addressing the issue of financing tertiary education, to look at the private gain versus social benefits resulting from educational outcome. We argue that social return from health workers may have been under-estimated through conventional economic analysis. Moreover the government may not really subsidize the university training for most students in health sciences. Medical, dental, pharmacy and nursing graduates are assigned to compulsory public rural services after graduation. They will be fined for varying amounts of money if there is a breach of contract.

If the amount of the fine is properly calculated, the government, in effect ends up giving an indirect loan to those students who breached the contract. For those who work for the government, they are underpaid compared to private sector employment. Their forgone income, compared to the market price, exceeds the amount they are expected to pay back to the government if they breach the contract. This again becomes another form of indirect loan where graduates pay back their tuition by working in underpaid government services.

By not charging students, but by directly obligating them to serve three years in rural areas, the government created a hard-to-refuse condition that helps to increase the social benefits contributed by these medical and health professionals. This type of contractual relationship between the government, graduates and the society at large could hardly be seen as an unjustifiable subsidy, but rather a reason to invest more. It might even be unfair to see this as a subsidy at all. Compulsory rural services are not enforced to other non-health graduates who are also equally produced at the social cost.

This is not to say that such a relationship should not continue. On the contrary, it should be continued as it helps the country in distributing various kinds of health personnel to rural and harsh remote areas of the country. Rather than seeing this as an unjustifiable subsidy, it would be preferable to charge full cost and let the students apply for educational loans thus freeing them from social obligations to rural services, and losing the opportunity to more properly distribute them to the rural areas. The government should consider this as a highly tactful way of building the right relationship between graduates, the government and the public at large.

## *5. Conceptual framework for reform*

In this part, the emerging public and private role in manpower production is discussed. In a *laissez faire* capitalist economy the State will not unnecessarily interfere with the market unless the market doesn't work properly (market failure). In cases of unilateral information, when consumers could not exercise their sovereignty properly, or the people's consumption provides excessive external benefit or cost (harmful) to society, there is a need for government intervention[11]. However, it doesn't mean a state role in both financing and provision.

We modified the framework introduced by Bennett[12] on public private role in financing and provision of health care. Instead of health

Table 12 Conceptual framework on public private role in financing and production of manpower.

| Provision | Public finance | Private finance |
|---|---|---|
| Public University/ Colleges | Quadrant 1. Government budget for the training of health manpower (under-graduates and post-graduates) in government owned universities/colleges | Quadrant 3. Household payment for tuition fee in public universities/colleges |
| | Cell 1 broad opportunity | Cell 3 broad opportunity |
| | Cell 2 narrow opportunity | Cell 4 narrow opportunity |
| Private University/ Colleges<br>• not for profit<br>• for profit | Quadrant 2. Government budget is used to contract private universities for production | Quadrant 4. Households pay for tuition fee in private universities |
| | Cell 5 broad opportunity | Cell 7 broad opportunity |
| | Cell 6 narrow opportunity | Cell 8 narrow opportunity |

care provision, we adapted production of health manpower. We classified private universities into two small categories: for profit and not-for-profit Foundation owned institutions, as cost of production, profit motive and policy instruments are quite different between the two categories.

Table 12 produces a two by two table, showing public financing for government universities (Quadrant 1) as the dominating share. Public subsidises, through contracting private universities (Quadrant 2) for production of manpower has a minor share. Household payment for tuition fees in public universities (Quadrant 3) is common but plays a minor role, as discussed at length. Household payment for tuition fees in private universities (Quadrant 4) is quite common for most disciplines except in the case of health manpower (see also Table 2). We then add broad and narrow education opportunities to breakdown each of the four quadrants, altogether making eight cells of policy options. Three major aspects, i.e. financing, provision and education opportunity need to be taken into account in policy analysis. In terms of education opportunity the concern is whether only some privileged few had advantages over the majority of the population (narrow opportunity) or the majority had equal access (broad opportunity). Thus we had a matrix of eight different possibilities in deciding how to strive for future policies.

The first option is public financing of public universities with narrow opportunity (Cell 2). This seems to be the present dominating picture where most educational institutes are publicly owned with low tuition fees and only the economically better off would have access.

There could be the second option of public financing public universities providing broad opportunity for the majority (Cell 1). This would be achieved by improving access for students from the lower economic band in the current system. However increasing public financing is a major constraint.

The third and fourth options are private household paying for education in public universities with broad or narrow opportunities (Cell 3 and 4). This is the option of charging full fare in all public institutions with very few in private institutions. It is quite unlikely except for a few study fields that may require high investment and yet not very high demand for education. Whether this will result in narrow opportunity if the government leaves financial burden totally to households remains to be seen.

It could achieve broad opportunity goals if financial mechanisms were introduced to support those who could not afford to pay.

The **fifth option** of public financing private universities with broad opportunity is achievable if the government wanted to invest more (Cell 5) through private production. However there are very few models where government contracts private educational institutes for manpower production.

The **sixth option** is public financing for private universities with narrow opportunity (Cell 6). This could happen if the fifth option was not properly managed.

The **seventh option** is private household paying for education in private universities with broad opportunity. It seems to be the direction most governments think they are heading towards, by promoting private universities and provide educational loans to those of lower economic status.

The **eighth option** is private household paying for education in private universities with narrow opportunity. This is highly feasible by allowing the private sector to provide education based on household ability to pay without government interventions. However it may be as undesirable as discussed in the fourth option.

From where Thailand is at present, especially with regards to education of health professionals, the possibilities are enormous as described above. It is therefore not necessary that the government look only at the option of charging the full tuition fees in public institutions, or replacing public institutions by private institutions. This will certainly reduce the opportunity of the economically underprivileged, even though educational loans are made available.

## 6. Policy options for health manpower production

What else could we do to improve the situation? There are a few things that need to be done taking into account the conceptual framework introduced above.

1. Increasing opportunity for the majority of students. This could be carried out through various means that need to be emphasized, once we are certain of the relationship between the students and the government as debated above. Two concrete measures carried out sluggishly by the present schemes should be accelerated. First is increasing the allocation of entrance examination quota to students in the rural areas. Second is the provision of scholarships, not only for the tuition fees but for daily necessary living expenses to students from the lower socio-economic group.

2. Increasing efficiency of existing public educational institutions. If we agreed that the existence of public institutions have actually contributed to the progress we have made, the next step is to make them more efficient. Deregulating public educational institutes is the mandatory next step. This is aimed not to allow universities to charge full costs to the students in health sciences. They may be allowed to do so for those fields where public benefits could not be clearly justified or private returns overwhelm public contributions such as engineering, etc. Deregulating educational institutions will allow them to utilize resources more efficiently by adopting more realistic management practices rather than adhering only to bureaucratic rules. It will help improving staff employment as well as utilization and lead to lower cost of production. This is certainly of high priority considering the fact that public institutions may not be as efficient as their private counterparts.

3. Introducing rigorous standards as well as proper financial supports to promote not-for-profit private educational institutes. If the policy is to ensure equal opportunity for higher education in health sciences along with minimizing improper subsidies to those who can afford to pay, the idea of private institutions is one of the logical solutions. However, as we have pointed out when presenting the background data, costs for health sciences education is quite high. Leaving this to pure market forces may lead to substandard educational management which eventually will impinge upon society as a whole.

Moreover if the government sees the current "seemingly subsidized model" as not unjustifiable, the same type of arrangement could be extended to the education offered by the private institutions. This will be possible only when a private institution is operated on a not-for-profit basis. In effect, allowing the public institutions to be deregulated is another end from which a not-for-profit private institutions could be established and used in the future education system, especially for health sciences students. However this will also imply a changing role of the government. It should then perform the function of a good referee and promoter. This includes setting rules and requirements, in collaboration with professional organizations, to ensure good educational standards as well as to establish systems and mechanisms for monitoring to ensure that various educational institutes operate to meet the social objectives as a whole.

By relieving the government from the need to exert tight control over public universities, it becomes more likely for the government to take up the new but challenging role of ensuring equity, quality and efficiency for the society in general rather than looking at only ways and means to relieve itself of the financial burden with little concern over the greater good of the society.

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## Discussion

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After a critical review of the national situation regarding the cost of and returns from the production of health manpower, the authors are making proposals for reform.

The analysis of the comparative advantages for the society which prepares the future generation of health personnel ("the social return") and for the individuals who will have benefited from the educational programmes ("the private return") provides a quantifiable basis for assessing the efficiency in manpower production. It is fair to say that the social return from the educational investment in health manpower is notably underestimated.

The authors rightly note that the fact that new graduates must serve rural areas for a period of three years is an added value of great significance. Not only is it a social gain in terms of manpower years given to society, it is also a commitment of youth to dedicate some of their best years to the interest of the nation, which may serve as a role model for other young cadres outside of the health sector. It may also contribute in reinforcing the spirit of solidarity in favour of the disadvantaged which bring coherence, stability and peace in a country - all values contributing directly or indirectly to health development.

The authors present the conceptual framework with the eight cells of policy options as a basis for informed decision - making in health manpower production. The pros and cons of each option are outlined with a particular emphasis on "the broad opportunity" geared towards an equitable access to education. They wisely suggest that the government should not limit itself to only one option but be open to several options, to allow the economically underprivileged to access education either in public or private institutions.

Coming to the final recommendation, the authors suggest three courses of action. The first one, for increasing opportunities for the majority of students, is straightforward and the proposed measures are explicit. The second recommendation for improving the efficiency of existing public educational institutions, suggests deregulation and adoption of management practices that are close to the ones used in private institutions, although no explicit measures are proposed.

In my view, the **third recommendation for setting educational standards is the most important one.** Private and public education institutions should equally comply with best practices in education. Standards need to be proposed and indicators be developed for use for evaluation and accreditation purposes.

As the debate is primarily organized around the notion of a fair balance between the benefits for society and for individuals, it would be useful to propose indicators that illustrate this duality.

Beyond the purely economical aspects of the benefits, the individual gains could be assessed in terms of personal development and capacity to play an active and rewarding role in society. Standards of quality in education would therefore apply, such as, for instance, the development of critical thinking, the propensity to be a lifelong learner, the capacity to work efficiently in groups, the ability to communicate and develop leadership skills.

From the point of view of social gains, standards should be set to assess the social accountability of the educational institutions. Social gains should be measured in terms of the contribution of the institution in responding to society's priority concerns, not only through its education (or manpower production) function, but also through its research and service delivery functions which are interwoven with the education function. A "social accountability grid" would help to assess the institution's status against four basic values in health development : relevance, quality, cost-effectiveness

and equity[1] and propose a reference to improve the way the institution contributes to people's health.

Standards, once adopted, must be used for stimulating progress, either through self-assessment procedures or more formal evaluation and accreditation. The government has a special duty in helping to set such standards, in consultation with academic authorities and other concerned bodies, and in proposing processes for using them for institutional development, in both public and private institutions. The compliance with national standards should reduce the heterogeneity of delivered education and spur the efficient utilization of resources and talents existing in any institution in favour of the nation's health.

1. Boelen C. The Five-Star Doctor: An asset to health care reform? *Human Resources for Health Development Journal (HRDJ)*, 1997; 1:6-12.

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It is indeed appropriate to debate the relative public and private roles in manpower production because of the rapid changes with an increasing share of private providers. According to the present constitution, Thailand is encouraging more involvement of the private sector in the provision of higher education and health care. Thus, policy debate may be useful for the new constitution being drafted at present.

While civil service reform, estimated cost, and relative rate of personal and social return from higher education have bearing on national policy options, there are many other, perhaps more important, factors that must also be considered. The civil service reform aims primarily at increasing efficiency of the system. The authors appropriately cast doubt on the estimation and conclusion regarding social return from education of health professionals. The provided conceptual framework for reform in this article is, in my opinion, very limited, taking only provision and financing into account in determining policy options for future actions. Oversimplification can lead us astray.

A few basic issues are offered here to widen the debate.

1. **Diversity in the complex system of manpower production makes a generalized consideration too vague or too specific to be applicable to different parts of the system.** Training of health professionals is much different from that of engineers, teachers or business administrators. Even among health professionals, medicine has different operating factors in comparison to nursing or pharmacy. The single private medical school was opened only in the past decade, while many nursing schools have, for many years, been private. The pharmaceutical industry is rapidly developing, and education in pharmaceutical science is therefore shifting from hospital and public pharmacies to technologies. Thus, national policies on education of these professionals cannot be set across the board. Perhaps, this article can be limited to addressing medical education in more depth.

2. For medical education, **the quantity of output is important.** Overproduction should be avoided because it has been shown to produce serious negative effects on the society. Medical doctors can create their own market and unnecessary expenses are the result adding to the problem of cost escalation. In some countries in Europe, it is a constitutional right for students to enter medical education. In contrast, Thailand has over the years maintained that medical education aims to serve societal needs, not the desire of students. This has a serious implication for private medical schools because of the high investment and operating costs. Large classes are required in order to collect adequate

income from tuition fees. Quality is then difficult to maintain as observed in some countries in the region. Collection of high capitation fees has led to the supreme court ruling in India limiting the practice, because of the resulting inequity in admission to medical schools. The private medical school in Thailand has been required by the Thai Medical Council to create a non-profit foundation. Subsidies to private medical schools may be an option. Efficiency in the management of medical schools both public and private must be sought in order to cope with the limited resources. Student loan schemes which are opened to students at both public and private schools is new and may be the answer. Debate on appropriate mechanisms for quantity and quality of output is needed.

3. **Specialization and postgraduate training** has serious bearing on the quantity of medical manpower and quality of health care. Technological developments and enlargement of the middle class population create forces that must be considered in policy options. **Commercialization of medical care** and **third party payers** complicate the system.
4. **Globalization** is another emerging trend and mobility of students and professionals across national boundaries must be addressed when considering national policy options. Medical graduates from foreign medical schools have been a neglected option which needs better policy consideration. Branches of foreign medical schools in the country and twinning arrangements are both an opportunity and an unavoidable complexity.

Finally, I agree with the notion of the changing role of the government. Promotive function is beyond question, but regulatory function through setting rules and requirements may be outdated in the present social environment.

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The researchers and policy makers who want to understand better on how and whether or not the civil service reform strategy will lead to a desirable impact on efficiency and quality of manpower production while trying to achieve social equity, must in the first place possess a framework to analyze the reforms against. The debate is therefore beginning here when the emphasis of the analytical framework has to be settled. Social equity may be interpreted as equal access to core services rather than equal outcomes or expenditures. Core services may have different meanings within different policy directions. If the reform policy for the health care system of Thailand provides more emphasis on health promotion, health protection, disease prevention and control, then, the core services will have to respond more visibly in this direction. The analytical framework in this sense becomes a challenge for the researchers and policy makers to agree among themselves on how they interpret the scope of the core services. In many instances, these have been left open and only a few people know what to promote, what to protect, what to prevent, and how to carry out this work technically as well as through the mix of the public and private sectors system.

In order for this analytical framework to be settled at the beginning of the reform process, some essential case studies will have to be carried out to obtain the required baseline knowledge. If the reforms are introduced without a defined baseline it is going to be difficult or impossible to know with any certainty, what would have been achieved by the reform strategy or with the investment made in the process of reform. Drawing from the experience of other countries, the recent reform process has incurred establishment as well as transition and ongoing transaction costs. There was no certainty as to what would be achieved, although there were clear objectives of more accountability through

the use of contracts. The introduction of contractual practices and commitment between the funder and the producer is of utmost importance in the initial phase of the reform process. The anticipated gain from good contractual practices between the funder and the producer is increased information regarding what educators and trainers are doing and not doing, as well as how much their services cost. This is a social learning opportunity for both sides to have a greater nderstanding of education and training products and the beginnings of the acquisition of adequate information to reallocate or manage resources. It is remarkable, however, that under the concepts and good practices of contractual services agreements, if anything should go wrong an appropriate and prompt action must be undertaken to stop the contract or to ensure that nothing is violated.

The main concerns surrounding the current approach in privatization are poor or inappropriate contract development and agreement, negative reaction on the part of the general public and the media due to problems of perception, increased transaction costs, elements of "market failure", conflict between the State owned producers and commercial institutions, service development, central agency concerns and the inevitable political interference. The State owned corporatized education and training entities may have to face a challenge of meeting desirable objectives among management issues, especially financial, on the one hand and professional standards, values, and ethics on the other hand. If this challenge could be handled correctly, the reform strategy and process will help to institutionalize student-centred education and training processes, constructive relationships between managers and professional educators or trainers, higher degree of evidence-based teaching and learning in medicine, nursing, and public health. Conversely, the contract institutions may hold all or most of the information on the costs and quality of their education/training products compared with the funders and payers (students) who may be naive and in relative ignorance. Nevertheless, privatization, separation of the funder from the producer, and the use of information are key reform strategies because they enhance understanding of the products and they serve as an accountability tool.

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In a laissez faire economy, cross-subsidy by the government should be kept as minimized as possible. Although this premise has been accepted by most developed and developing nations, some argue that there is still a need for constructive intervention by the government especially in the case of education investment.

As for Thailand, the role of the public sector in human resource production has long been an unsettled issue. There are controversies on, among other things, who should be responsible for human resource production or who should bear the cost of education. Fortunately, most of us have agreed on the purpose of education and the principles of education, including the principles of educational management.[1]

Our education system needs a paradigm shift. Education is an investment. The government should provide free education only at the compulsory levels which aim to develop wisdom, merit, and fundamental knowledge. For tertiary education which aims to develop career or professional abilities, the students make their own choices and are the main beneficiaries, they therefore should bear the cost. The role of the government is to make sure that all walks of life have equity of access to higher education by providing scholarships, loans, etc. and that minimum standards are met. At the tertiary education level, government subsidies should be reduced, tuition fees increased, and the role of private universities promoted.

This paradigm shift is supported by the facts that 88-93% of the total cost of the tertiary education is subsidized by the government[2], that the private rate of return is greater than the so-

cial gain[3], and that university students generally come from a higher socio-economic strata.[4] There is no point for a blanket subsidy for the people who clearly can afford to pay much more. This cost of production should not be borne by tax-payers. Besides, the government can use the savings from subsidies in other ways such as raising the salaries of the public personnel.

**The graduates, however should pay only the true and full cost, not the cost of inefficiency.** Currently the true and full cost of education in the public universities is known to no one. Based on estimates, the cost of medical doctor production per graduate in the public universities was 1.8 million baht compared to 1.1 million baht in the private institutions.[5] Two points should be noted on these numbers. First the public cost was not true and full since it covered only recurrent costs, but no charges on capital costs. And second, the data were based on different years. The public estimate was made for 1993-4, while the private one covered 1996. Notwith-standing the above facts, the medical doctor production in the public universities was more costly than in the private sector counterparts. Neither the graduates nor the tax payers should bear this efficiency cost (see Table 1).

**The deregulation of public educational institutes is a prerequisite for efficiency. But it does not guarantee efficiency.** Only through the invisible hands of market mechanisms can the cost be cut while qualities increased or at least maintained (see Table 2). Since the production of public health personnel is contestable, the private production should be promoted and proper support be provided both to not-for-profit and profit institutes. By nature, the private universities are more adaptive to market fluctuations than public institutions, especially when coping with the forecast excess supply of medical doctors in the next 20 years.[6]

1. The purposes are to help people develop their wisdom, merit, and fundamental knowledge for themselves and society and to develop working abilities and professional knowledge for their careers and economic development of the country. The principles are equity for access; balance among wisdom, merit, fundamental knowledge and working ability; consistency with economic and social development; and varieties in forms, content, and methods. See: Panom Pongpaiboon. **Education system for the development of the national human resources.** Bangkok: National Education council, 1990; pp. 36-40 (in Thai).
2. National Education Council. **Expenditure and return on investment in university education.** A Research Report. Bangkok: Office of the Prime Minister, 1989: 244. (in thai).
3. Op cit.
4. National Education Council. **Expenditure and return on investment in university education.** A Research report. Bangkok: Office of the Prime Minister, 1985. (in Thai).
5. Wibulpolprasert S, Jindawatara A, Rachatarom B et al. **Policy options for health manpower production in the next two decades.** A Research Report. Bangkok: Health Manpower Development Institute, Health Systems Research Institute, Health Policy and Plan Bureau, 1997. (in Thai).
6. Phananiramai M. Suksirisaereekul S. The forecast on sickness patterns and future demand for medical doctors. *Health Systems Research Journal* 1996;4 (in Thai).

Table 1 Cost of medical doctor production per head in the public universities

| Year | Cost | Opportunity Cost | Total Cost |
|---|---|---|---|
| 1 | 300,000 | 161,587 | 461,587 |
| 2 | 315,000 | 129,648 | 444,648 |
| 3 | 330,750 | 97,581 | 428,331 |
| 4 | 347,288 | 65,325 | 412,612 |
| 5 | 364,652 | 32,819 | 397,471 |
| 6 | 382,884 | 0 | 382,884 |
| Total | 2,040,574 | 486,960 | 2,527,534 |

Assumption

1. First year cost is 300,000 baht and increases 5% per year.
2. Opportunity cost is calculated based on interest rate of 9%

Number of Years for Additional Fixed Salaries for Medical Doctors if the above cost is transferred and used up.

| Fixed Additional Salaries | No. of Years |
|---|---|
| 15,000 | 14 |
| 20,000 | 11 |
| 25,000 | 8 |
| 30,000 | 7 |

Table 2 Amount of money that can be saved if the public universities can produce medical doctors with the same cost as the private ones

| Year | No. of Graduates | Saving 0.7 million baht per head |
|---|---|---|
| 1992 | 837 | 58.59 |
| 1993 | 816 | 57.12 |
| 1994 | 826 | 57.82 |
| 1995 | 825 | 57.75 |
| 1996 | 848 | 59.36 |
| Total Savings | | 291 million baht |

Notes

1. Cost of medical doctor production in the public universities is 1.8 million baht per head and 1.1 million baht in the private institutions. (from Wibulpolprasert and others (1997))
2. With that savings we can produce 264 additional doctors.

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There are so many pertinent points in this paper, and my final impression is that it is an excellent paper, looking at the role of the Thai government in higher education. Although the emphasis is on health manpower production, it is a study model that is applicable to manpower production in other fields as well. I wish it is published and read widely, especially by major policy makers of the government.

May I propose a broad set of policies concerning the role of Thai government for higher education in the coming century:

1. Set new visions and goals for higher education in Thailand. **We need visions that are attainable and goals that can be achieved.**
2. **Re-structuring government agencies** responsible for higher education into a single agency; or if that is impossible, into a national policy committee for higher education. This agency or committee should be responsible for setting policies, standardization and accreditation, and budgeting guidelines.
3. **Privatize all public universities and colleges,** and treat all higher education institutions with the same policies and practices.
4. Build up the mechanism for **providing funding** to these institutions **on the basis of academic performances,** e.g. numbers of annual graduates, research results, etc.
5. **Set up standards and quality assurance system** that applies equally to every institution.
6. We already have **a student loan scheme** for those from lower socio-economic status. If properly administered, it will be able to guarantee equity of access, based on the academic merit system.
7. If the **Ministry of Public Health** needs health science graduates, **it should provide enough incentives,** i.e. scholarships to ensure students' participation. Forced or compulsory services must be discontinued at the latest by the turn to the next century. Forced or compulsory services should be avoided at all cost, except in war time.

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The paper focused principally on two issues. Firstly, it explores equality of opportunity and a return on the public investment in tertiary education. Secondly, it examines the means of making the production process more efficient.

The basic argument for requiring some form of payment from those benefiting from tertiary education is that there is a differential between the private and social benefit on the initial investment. However, while the economic returns are relatively easy to measure, the other social benefits are both less easy to quantify and more open to different interpretations and value judgements. This lack of clarity, despite the apparent precision of the economic measures, moves the discussion from a strictly intellectual argument into the political domain in which the objective is to find an acceptable contribution from the beneficiaries of tertiary education rather than a rationally justifiable contribution. In these circumstances, other criteria for private contributions may be seen to be more appropriate to those offered in the paper. For instance, a fixed percentage of actual costs for all disciplines which imposes some equity on the input side of the equation.

Certainly more and more countries, developed and developing, are moving towards some form of charging to the individual beneficiaries. The charges do, however, appear to be based on **arguments for extending the public purse or**

for maintaining the financial viability of private institutions rather than on concepts of private return on the education investment. The focus in all this is not so much on the source of the education (this, given the high capital costs involved, is largely determined by existing education patterns) but rather on what mechanisms can be introduced which facilitate equality of opportunity and widen accessibility.

The use of preferential support schemes for those deemed to be disadvantaged has come under "attack" as being unjustly discriminatory. Loan schemes with deferred repayment may offer greater opportunity for imposing charges and yet maintaining equality of opportunity.

The need to improve efficiency, as well as cost sharing, particularly in public sector institutions, is now well recognised. Increasingly, through a variety of reform programmes, the role of government is changing with a separation of its financing role from that of standard setting and performance monitoring. This can and does lead to significant improvements in efficiency. However, these beneficial changes can only be realised, without damage to quality, through the existence of effective professional bodies, an information system that permits meaningful comparisons to be made, an inspectorate that has appropriate powers and is rigorous and fair, and governmental policy that is consistent in promoting the educational development it wishes to achieve.

This paper by Dr. Somsak and his colleagues will undoubtedly stimulate further debate in the search for new and more effective mechanisms for improving equality and reducing costs in tertiary education.

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The paper by Chunharas et al, suggests that the time is ripe to reconsider appropriate public and private roles in human resource development for health care-but that this debate needs to be broader than one simply considering tuition fees in public institutions. I like the framework adopted by Chunharas et al, and largely agree with their recommendations regarding improved efficiency in public educational institutions and the need for rigorous standards in the private sector. However I think that some of the arguments presented about financing physician education and equity are worth unraveling further. The discussion here focuses primarily upon this topic. Let's start, however, by considering why government needs to intervene in the production of human resources for health at all?

For primary education it is commonly argued that significant externalities exist: a society benefits considerably from high literacy rates[1]. If social returns to education are higher than private returns then an unregulated market would tend to under-produce students. However as Chunharas et al convincingly demonstrate, at the tertiary level private returns are much greater than social returns. I agree that the rates of return estimated for medical graduates in Thailand (presented in Tables 8 and 9) appear unduly low. As we do not know the assumptions upon which they were based, it is difficult to assess their reliability. But even if social returns were increased by a factor of two they would still be substantially less than the private rate of return, implying that there was no need for government intervention in the market on the basis of externalities.

There may be other efficiency arguments for government intervention in the market place, notably the quality of education may be poor unless government plays a key role in setting standards. However as discussed in the Chunharas paper, standard setting and regulation can be performed by governments without direct intervention in provision or financing.

The core argument for intervention therefore seems to be equity or distributional issues. At least two different aspects of equity are relevant: first is the question of *social selectivity* in education. The data presented by Chunharas et

al demonstrate that those gaining access to university education in Thailand are considerably more affluent than the average Thai. This is not surprising, since evidence from virtually every other country, industrialized and developing, supports this observation. Studies in the US, for example, found that the average income of parents of public university students was 50% more than of non-university students (Stiglitz 1988). In Thailand the differential is much greater. Many societies believe that individuals' chances in life should not be determined by family income, i.e. there should be equality of opportunity. This is a prime reason for government intervention in education.

When considering the production of human resources for health there is a second strand to the equity debate which Chunharas et al also bring out. This relates to the potential of human resource development policy to redistribute social services. At its most basic level this redistribution occurs through the statutory three years of service in a rural area for all health staff trained at public expense. But is three years in a rural area sufficient to make up for the sizable public subsidy which each medical student attracts? According to data collected by Chunharas et al in 1990[2], income for a physician under the age of 30 in the public sector was on average about B16,000, compared to about B37,000 in the private sector. Even allowing for inflation it seems unlikely that the loss of income from three years of public service in a rural area anywhere near compensates for the total amount of government subsidy per medical graduate-approximately B1,678,000.

Might there be more efficient ways to attract and retain medical personnel in rural areas? **One approach would be to train more people who are accustomed to living in remote rural areas.** This brings into play a second argument for reversing the social selectivity found in Thai universities : a more balanced profile of medical students may ultimately do more to improve the distribution of health care services than the three year rural service rule.

What are the key barriers preventing lower income groups accessing university education at the same rate as higher income groups? This is a question which may be worthy of further analysis. Chunharas et al imply that financial barriers, notably earnings forgone and living costs whilst at university are significant barriers. Hence their recommendation to increase the number of scholarships for living expenses of students in lower income groups. Evidence from elsewhere suggest that although this is likely to be part of the problem, **many barriers occur at earlier stages in the education process.** Children from poorer homes often leave school prior to completing their secondary education. If they are fortunate enough to complete their secondary education then that education is more likely to be of a lower standard than children from more affluent families - hence their chances of gaining access to university are slimmer. Whilst Thailand has excellent primary school enrollment rates (approximately 97%) enrollment rates in secondary education in Thailand are only 30% (compared to 42% in Indonesia, 74% Korea, 53% Malaysia and 65% Philippines[3]).

There is an opportunity cost to continuing to allow wealthy students highly subsidized access to higher education. Estimates presented by Tan suggest that the average cost per student per annum in a university is ten times that of a secondary level student. Courses in medicine generally cost substantially more than the average under-graduate course. If fees for medical education were to be increased then this policy should be pursued with the understanding that savings be fed back to promote greater equity in education at all levels of the educational system.

Creating financial mechanisms such as educational loans is certainly a necessary complementary policy to higher tuition fees, but it is not a sufficient one. It is generally understood that risk aversion is greater amongst lower income households[4]. Such households may be unwilling to run the risk of unemployment upon graduation or such like and therefore unwilling to take out a loan to finance tertiary education.

Higher cost recovery in human resource development therefore needs to be combined with an aggressive program of scholarships targeted at good students from poor backgrounds who would otherwise not get to go to university.

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Dr. Somsak Chunharas and colleagues deserve our warm compliments for their paper on the roles of the public and private sectors in health worker training. They have brought together a wealth of data and perspectives to help policy makers address the difficult questions facing many governments today—how far, how fast, and by what means should they shift the burden of health worker training from the public to the private sector, and what are the potential risks of the various policy options. The wealth of data they have amassed is especially welcome since many countries have little information on educational costs, on who bears these costs, and on the rate of return of different occupational choices.

The many policy options presented are both refreshing as well as challenging. Too often countries consider only a few alternatives and these are either little different from the status quo or are so different as to be largely rejected or ignored. When the alternatives are numerous and vary significantly, one from an other, the challenge is to decide which one(s) are worth selecting. Several observations may be useful for Thailand and other countries as they analyze the choices before them.

**Pilot project experimentation.** With so many uncertainties as to the likely effects of alternative policies, Thailand should be slow to impose a national norm on all training programs. During the next few years flexibility and innovation should be encouraged, matched by careful monitoring and evaluation to determine which policies promote the best outcomes.

**Relationship between costs and quality.** Private educational institutions seem to offer better faculty-to-student ratios and lower total costs, but are public and private institution medical and dental graduates otherwise similar? What about their relative performance on examinations? And after their required three years of public service, are their career paths similar as regards the proportions who specialize, who work for government, and who work in the rural sector? These and related questions will need to be carefully studied to make sure that increased reliance on private sector training is not detrimental to public sector programs.

**Relative training costs of university and technical level personnel.** The nine-fold difference between the cost of a doctor and nurse is striking but not unusual. Can a doctor "produce" nine times as much health? Will adequate numbers of doctors go to where they are needed or are they concentrated in the cities, with the nurses there to help them? These large differentials highlight the importance of good requirements workforce projections to ensure the proper balance between the various health worker categories, with special attention to favoring a lean rather than a generous supply of doctors.

**Lessons from other countries.** Quite a few other countries provide useful lessons regarding educational reform but regrettably these are often undocumented in the international literature. Without going into detail and at the risk of over-

generalization, one might cite the following brief examples:

(1) **Latin America:** The high degree of university autonomy that exists in many countries has often resulted in large doctor surpluses and distortions of the national health care systems.

(2) **Japan** provides an example of the difficulty of coordinating public and private sector doctor intakes in the absence of substantial government involvement in the cost of medical education.

(3) **India's** premature attempt to implement a successful pilot scheme to strengthen rural medical services highlights the complexity of moving from a small scale project to one affecting the entire country.

(4) **The USA** provides a good example of the difficulties faced by government to modify quantitatively and qualitatively medical school intakes, and especially of how hard it is to reduce intakes once the country began facing a problem of oversupply.

With many problems to confront and many options to consider, the most important lesson is to make sure that one doesn't lose sight of the overall objectives to be sought. **A useful next step will be to develop criteria by which each policy option can be assessed and compared with others. Such criteria will include assessments of: relative technical and administrative feasibility, costs, and political and social acceptability; likely effects on graduate quality of care, productivity, commitment to public service, and practice location; and on equity of opportunity.** Though most criteria may not be amenable to quantitative measurement, qualitative judgments can be made that will allow one to get a sense of which options are likely to provide the best results. And from then on, the fun, and need for careful monitoring and evaluation, begins!