

## Round Table

### Why Plan Human Resources for Health?

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More than 50 years have passed since the end of World War II and 50 years have passed since the creation of the World Health Organization. During this period most countries of the world have at one time or another attempted to plan their human resources for health (HRH). These planning efforts have been rooted in the assumption that since a high proportion of health workers are trained and eventually employed at public expense, it is in the public interest to train only those numbers considered necessary.

Despite this interest, HRH planning results have often been discouraging. Some planning projects are never completed or are poorly executed. Other projects may come to a successful conclusion but often the plan findings and recommendations are ignored, are poorly implemented, or if implemented, have serious and unanticipated adverse consequences. In view of this history, reasonable persons may well ask, "Why bother to plan HRH; let the marketplace seek an appropriate balance between supply and demand?"

The answer to this question has five parts:

- (1) Why attempt HRH planning?
- (2) What should be the objectives for HRH planning?
- (3) Why has HRH planning had limited success in the past?
- (4) Will these reasons for limited success continue in the future?
- (5) And lastly, even if HRH planning might be useful, why wouldn't *market forces* be a better guide to policy?

To these I have added a sixth and final question: If both HRH planning and market forces have their use, when should we choose one and when the other?

**Why attempt HRH planning?** Today's workforce is the result of a great many decisions, big and small, taken by many different persons or institutions over the past 40 or more years. For reasons such as those listed below, and with the benefit of hindsight, many of these decisions were unwise. As a result, health system managers are now often confronted with:

- Too many health workers in some occupations, too few in others, and in some countries, substantial numbers of trained but unemployed or under-employed health personnel. Problems such as these can severely distort the health system, reduce productivity and result in low morale. Rather surprisingly, the tendency in many countries is to train more doctors than can be usefully employed, given available resources, and too few of the middle level technical and nursing personnel that can make doctor-time productive.
- Workers with inadequate or inappropriate training for the jobs they are expected to do. This is especially true in the middle- and lower-level categories. Small

armies of poorly trained and supervised support personnel reduce the productivity of the whole system.

- A poor *functional* distribution of the workforce. A good example is the case of countries with too many medical or surgical specialists. Specialists seek and find patients with specialized problems, do costly specialized procedures, require costly specialized equipment, and tend to drive the health system toward urban and hospital-based care.
- A poor *geographic* distribution of the workforce. Virtually all countries have far higher health worker-to-population ratios in the large urban centers than in small towns and rural areas, despite a wide variety of programs to reduce the geographic imbalance.
- The political necessity of hiring more workers than can be reasonably afforded, resulting in low salaries, poor productivity, high turnover, and/or inadequate funds for the non-personnel portion of the budget.

Looking to the future, many countries face severe economic constraints on health system growth, and some are trying to implement health sector reform, often by shifting more health services towards the private sector. Since health personnel typically account for at least two-thirds of all health costs, decision makers must look to the longer range economic and service consequences of decisions affecting workforce supply, requirements and deployment.

**Objectives of HRH planning.** Health and educational authorities are continually called upon to make a wide variety of decisions affecting the health workforce. To cite just a few: How many health workers, of what types, with what qualifications, are required? How should the health workforce be distributed? What should they do and how should they be managed? The obvious reason for HRH planning is therefore to improve the quality of these decisions, and thus facilitate the orderly and timely training and deployment of the workforce.

There may be other reasons to do HRH planning, reasons which are often at cross-purposes to the ones just stated. In some situations seemingly endless planning studies can be used to delay or indefinitely block decisionmaking. In others, supposed planning activities are undertaken to support decisions already made, that is, to strengthen support for these decisions or to weaken opposition to them. And for many countries, planning may be done as a pre-condition to obtaining foreign assistance.

**Why has HRH planning had limited success in the past?** The reasons are numerous, complex, and often are equally applicable to health services planning in general. They include:

- Limited support for strategic planning in general, at least beyond the next 3-5 years. With frequent budget crises, rapidly changing governments and hence changing priorities, many countries see little point in longer-term strategic planning.

- Lack of sustained support for planning. All too often planning is initiated in response to an apparent workforce crisis; some planning is carried out, the crisis passes, and planning interest and resources disappear. The results: high planning staff turnover, inadequate training in planning, limited accumulated experience and little institutional memory of what works and what does not, and weak linkages with the many units and interest groups that need to be involved in the planning process.
- Lack of a good balance between plan *product* (the plan document) and plan *process* (how the plan was prepared). To gain acceptance and facilitate implementation HRH planning must take into account the many and often conflicting viewpoints of those affected by the plan. If a good balance between product and process is not achieved, planning efforts may end up with a unacceptable product -- the plan -- or alternatively, a never-ending consultative process that doesn't result in a useful plan of action. Several national HRH planning studies done in Latin America in the 1960s illustrate these problems. In Peru and Chile plans were produced but in the absence of concurrent attention to process, they had minimal effect on policy. Colombia, in contrast, gave much attention to the planning process. Over much of the decade a large number of surveys and topic-specific studies were carried out but for various reasons the wealth of information thus generated was not be pulled together into a plan of action, instead remaining as a series of individual publications and reports. For most countries the tendency has been to give greater attention to *product*, to the detriment of *process*.
- Lack of appropriate and acceptably accurate workforce data, especially as relates to workforce supply, annual loss rates, private sector characteristics, service outputs, and staff productivity. Despite this continuing problem many countries have as yet taken very few steps to remedy this situation, even to the point of having complete information about the number of training program graduates. This is especially regrettable since correction of this problem would require only two relatively easy steps. First, ensure that all health training institutions above a specified level provide accurate annual counts of applicants, acceptants, entrants, and graduates according to a few key variables, with entrants and graduates being the most important numbers. Second, collect historical data, according to gender if possible, on the annual number of graduates over the past 40-45 years. It may be necessary to send staff to visit selected universities and schools to help with data collection but at the cost of a few months of work, planners would have historical information that will never require further update.
- Lack of planning methods and tools suitable for the kinds of systems and problems found in many developing countries. Such countries tend to have large and dominant public sectors, severe maldistribution of resources, low productivities, and many data limitations. With high public sector costs these countries need to be able to test different sets of planning assumption inputs on health and human resource outputs.
- Use of planning methods unsuitable or too complicated for the country situation. For example, many countries in Latin America used disease-specific cost-benefit

analyses and the health needs method as the bases for planning during the 1960s. Data requirements were so extensive and the underlying assumptions on the correlation between services and health effects so tenuous that the planning approach was abandoned after a decade of effort.

- Weak linkages between planners and decisionmakers that result in poor communications, lack of planner responsiveness to decisionmaker needs, and lack of decisionmaker understanding of how good planning could help. These problems are compounded by lack of good communications and policy coordination between those who train health personnel, the educational institutions, and those who employ health personnel, the health service institutions. The World Health Organization gave priority to promoting national HRH coordinating and policymaking bodies during the 1970s but these efforts had little effect. Among the many reasons for disappointing results were: inappropriate membership; high rate of membership turnover; inadequate or discontinuous staff support; weak agenda, with too much information sharing and too little consideration of major HRH issues; lack of sustained high level support; irregular attendance by members, who would often send substitutes to meetings in their stead; lack of continuity such that after several initial meetings, no further ones are scheduled or if so, it is only in response to crises; unclear mission and authority of the coordinating body; and no enforcement mechanisms to ensure compliance with decisions.
- Major decisions affecting the workforce, whether with or without prior planning, have often resulted in unanticipated or adverse consequences. As noted, a typical problem is that of having too many high level personnel and too few technical and support level personnel. Other countries, e.g., Ghana, Papua New Guinea, made decisions years ago to terminate training certain types of auxiliary personnel without considering the eventual costs of replacing them with higher level personnel and of whether such personnel to work would be willing to serve in hardship locations.
- With many groups having a vital stake in workforce policy it is often easier to avoid making decisions that might result in controversy than to attempt rationalizing the workforce through planning.

**Will these reasons continue in the future?** Will health workforce planning be any more accepted and successful in the future than in the past? There are important and interrelated reasons for optimism.

- **Increased economic pressure on the health sector.** Economic growth in the developing world has been very uneven in the past several decades. GDP growth rates in some African countries can't even keep up with population growth and many have rates only slightly better than population growth. Conversely, a number of Asian countries, e.g., Indonesia, Korea, Malaysia, Thailand, and others, with a history of high economic growth rates, have recently experienced major setbacks in their national economies that are likely to make them much more cautious in the future. As a result the social sectors, and health in particular, are under pressure through health sector reform and structural adjustment programs to

improve health services productivity and equity, without a commensurate increase in health sector size and costs.

- **Lending institution insistence on planning.** Most large health sector loans from multinational and bi-lateral sources now require a detailed operational and financial plan. Lending institutions recognize that quantitative and/or qualitative improvements in the health workforce are central to improving health sector performance. A detailed human resources development plan is now often a major requirement of a loan application.
- **More severe consequences of bad decisions.** In the past the consequences of bad decisions (or of the failure to make decisions) were often slow to appear, decisionmakers were seldom held accountable for the results, and since the public health sector had no competition and could not go out of business, the consequences were not catastrophic. This is changing fast. Private sector and multiple insurance plans now provide competition, training program outputs often exceed health sector absorptive capacity, and problems of budget shortfalls, inappropriate technologies, low productivity, and the like are now much more visible than in the past.
- **Increasing computer hardware and software capabilities.** In less than 20 years computer capabilities have soared. Desktop and laptop computers can now accommodate programs and databases that only mainframes could handle in the 1970s. With these increased capabilities managers are coming to appreciate how the many and complex variables affecting a modern health system can be analyzed to help them with decisionmaking.
- **Better planning methods and tools.** We now have a better understanding of the forces affecting the workforce and much better analytical and planning tools to work with. Advances in computer technology have been a major factor in making this possible. Virtually all countries now have public sector personnel files and budgets on computer. Large databases can now be stored, accessed and manipulated with ease, and the increasing complexity of statistical, analytical, graphics, planning and simulation software has been matched by increasing user-friendliness of these programs.
- **Simulation coming into use in many sectors.** The health sector has been slow to use simulation, scenario construction, games and other such methods to help with decisionmaking. This has been due to several factors, including: lack of competitive pressures; few patently disastrous consequences of bad decisions since poor people have few other sources of care; and lack of management training for senior decisionmakers, who for the most part are physicians. Indeed, the intrinsic nature of medical training and practice lead many medical administrators to apply the same approach to institutional decisionmaking as to making decisions about patient care, that is, with strong prescriptive views and minimal consultation with others. This situation is changing fast. National planning ministries use simulation to help make long range decisions affecting the economy, agriculture, housing, population, transportation, energy, education, and other sectors. Large businesses use simulation to improve decisionmaking

regarding potential markets, investments, purchasing and pricing policies, factory location and size, and project financing. Increasingly aware of the use of simulation in other sectors, health system managers are becoming more receptive to using simulation as an aid to decisionmaking.

- **Recognition of the importance of longer-term strategic planning.** Most decisionmaking is concerned with a one- to five-year timeframe, with particular emphasis on next year's budget. For many workforce decisions, however, short and intermediate-term projections are not enough. For example, a decision to change medical student intakes by 10% will only change the doctor supply by about 2% in the first 10 years! Thus doubling of medical student intakes would increase the doctor supply by only 20% in 10 years, but during the subsequent decade the effect could be far greater. Even with shorter health worker careers such as nursing, it takes a long time to implement major quantitative or qualitative changes, and an equally long time to undo major mistakes.
- **Better appreciation of the qualitative and process aspects of planning.** As earlier noted, many workforce planning efforts have suffered due to an imbalance between emphasis on plan *product* and plan *process*. With improvements in powerful analytical tools and databases, and by being more selective about what is studied, the time needed to develop the quantitative part of a health plan has been greatly reduced. This in turn provides more time to address the more difficult qualitative part of a HRH plan, and to design a planning process that promotes plan acceptance and implementation. This will require the involvement of planners, decisionmakers and stakeholders throughout the entire planning effort.
- **Increased interest in health services research.** Many of the above developments, combined with a virtual explosion of health services research and researcher training in the industrialized countries, has led developing countries to examine more closely how their health systems work. Research into such areas as the determinants of service utilization, program costs and effectiveness, productivity, staff workloads, staff satisfaction and loss rates, all have high relevance to workforce planning.
- **Increased priority for HRH management, and hence for management training.** The only way to increase health system productivity, and ultimately effectiveness, without comparable increases in size and cost is to improve management. Short-term and academic degree training in the management sciences has greatly expanded in recent years, health facilities and health systems increasingly seek trained managers, both with and without prior medical training, and management books and journals abound. Major components of good management are, of course, careful planning, both strategic and programmatic, timely data collection and analysis, and program monitoring and evaluation. We can expect this drive to improve health system performance through better personnel management will gradually serve to strengthen interest in health workforce planning.

**Why wouldn't "market forces" be a better guide to training policy than planning?** Even if HRH planning *could* be useful in the future, this doesn't necessarily

justify its use. Perhaps the goals of HRH planning can be better and more economically attained by the spontaneous interaction between supply and demand, or what we term *market forces*. The market provides feedback signals at two points, training and employment. Sometimes these points are closely connected such that a workforce surplus or shortage quickly leads to changes in training program intakes. Other times, as in the case of many Latin American medical schools, with Mexico and Argentina as extreme examples, a doctor surplus may have little effect on school intakes. Quite apart from questions of accuracy or utility, market forces have at least two important advantages over planning; the cost of monitoring them is low and no one has to assume responsibility for any unpopular "message" they produce.

Market forces have, in fact, long been the main determinant of the numbers of persons working in most occupations outside the health sector. To name just a few fields, the number of persons working in business, manufacturing, sales, social services, transportation, agriculture, public safety, law, accountancy, teaching, architecture, and science are largely determined by market forces. Training program intakes for these fields are, in turn, guided by the market. So, why not let the same forces determine the numbers of health personnel?

Most countries already do, especially for lower level health workers. When there is a shortage of technicians or auxiliaries, training capacity is increased, and when there is a surplus, capacity is reduced. Training programs for these cadres are relatively short and inexpensive, shortages can usually be resolved by cross-training, enrollments can generally be reduced or programs closed without major controversy, and surplus personnel can usually find alternative employment. And as already noted, even for university-level health professionals, many countries have, in reality, let market forces be the dominant guide for training outputs. Sometimes this was a matter of explicit policy but most of the time it was either failure to do HRH planning or because such planning was ineffectual.

What have been the results of market forces on the health workforce? For reasons already noted in the first section of this paper, they have not been encouraging. Though HRH planning has been frequently tried, the numerous HRH problems we see in many countries are more due to letting market and/or political forces have their way than to poorly executed HRH planning. This has been most evident among higher level personnel. On the one hand there are the pressures from politicians, universities and students to expand the health professions and on the other, the near impossibility of reducing enrollments (since this would involve closing schools and/or reducing school size) when a surplus becomes evident. Mexico and the United States provide two dramatic examples of the failure of the market when it comes to doctors.

The Mexican situation is well documented by Julio Frenk and colleagues.<sup>(1)</sup> Starting in the late 1960s Mexico experienced a rapid expansion of medical school enrollments such that the doubling time for the medical workforce dropped from 31.5 years in 1969 to 10.2 in 1979. With the supply of doctors increasing at 7% per year and the population growth rate declining to near 2%, medical unemployment and underemployment rose. In 1986 a National Medical Employment Survey in the 16 largest cities found 23,500 doctors with no or little work to do, out of a workforce of about 120,000. Once supply and demand in the market place had reached this level of imbalance, measures were finally taken to cut enrollments and discourage new schools, but by the 1980s it was now too late to correct the situation. Young doctors were unable to practice their profession, years and moneys had been wasted,

government was under great pressure to hire more doctors than it could usefully employ, and scarce resources were diverted away from more effective health expenditures.

The United States provides another and well documented example, again with physicians. The medical workforce has been extensively studied over decades and national commissions have rendered many recommendations. Since the 1980s almost all observers have agreed that the U.S. has too many doctors, and that the high proportion of specialists distorts both the delivery of care and health care costs. Nevertheless, the doctor supply is still projected to increase much faster than the population and no solution in sight. Noren says it well <sup>(2)</sup> :

"A rational national physician workforce policy is a half century overdue. While some have argued that market forces will correct workforce flaws, 50 years of experience have demonstrated the error in that reasoning. Furthermore, the hope that managed care market forces will lead to effective workforce corrections reflects wishful thinking.... If we rely on managed care to solve the problems inherent in the current composition of the physician workforce, we will likely commit the public policy error of 'leaving the runway landing lights on a little longer for Amelia Earhart,' in the words of economist Walter Heller."

With this resounding statement, we come to our sixth and final question.

**Market forces vs. HRH planning: Criteria for selection.** We are now near the end of our tale. Health workforce problems abound, both HRH planning and market forces have been used to guide policy, and each has limitations. So a final question remains: When and under what circumstances should each be considered the preferred guide to decisions, particularly as regards supply policies? Quite a few criteria are relevant, many are interrelated, and no criterion is likely to be decisive. The more the following criteria apply in a given situation, and to a given occupational category, the greater the role of HRH planning.

- **Public sector is the primary employer.** If government must pay for most personnel, then government should have a major say in deciding how many will be trained since otherwise it will have to "pay" -- with money and in other ways -- with the consequences of shortages or surpluses.
- **Public sector is the primary or sole source of training.** Training is costly in student time and academic expenses so even if government is not a major employer, it should not waste limited resources on occupations unlikely to find good employment. For a few, numerically small occupations, this criterion may not always be applicable. For example, government may be solely responsible for training veterinarians, sanitary engineers, social workers and microbiologists, but since these categories are required by other sectors besides health, it may be inappropriate or even impossible to do careful planning.
- **Much training is not directly under government control.** This criterion, though seemingly contradictory to the previous one, will occasionally be applicable. Take the case of a country where quite a few criteria argue for planning physician outputs but most medical training is in the private sector, with largely private support. Since government can't directly control medical student intakes it may be especially important to involve private sector authorities in the



planning process to gain their acceptance of the policy recommendations.

- **Occupational category requires substantial training.** The long lag time between a changed student intake and a change in supply has been noted. For this reason occupations requiring three or more years of health-related training deserve special attention.
- **Occupational category is costly.** Some categories are costly due to high salaries while others are due to high numbers. Either way, the greater the cost, especially if borne by government, the greater the importance of proper planning.
- **Reducing enrollments or closing programs will be difficult.** Opening or expanding a program is usually easier than closing one, and in the case of university faculties of medicine, dentistry, etc., it may be virtually impossible. Tenured, powerful and highly vocal faculty don't give up their jobs easily, whereas such problems seldom exist with technician and auxiliary level training programs.
- **Substantial surpluses or shortages will distort health services delivery.** Some occupational categories are highly interrelated, e.g., doctors and nurses, nurses and auxiliaries, dentists and dental assistants, surgeons and anesthetists, and in these cases planning will be important to ensure a proper balance. The relative balance between the supply of medical generalists and specialists is also important and argues for not relying too much on market forces to guide specialty training.
- **Minimum standards of performance are required.** Most countries accept the notion that powerful drugs and other therapies should not be in the hands of anyone and hence have controlled entry into selected occupations by means of training and licensure requirements. Thus a totally free labor market does not, and cannot exist for some health-related disciplines, as it does in many other fields. The greater the controls over entry, the greater the necessity to do at least some planning to ensure a match between supply and requirements.
- **Occupational category is undergoing significant change, overlaps with other categories, or is being phased out.** Planning may be indicated even in the absence of other compelling reasons when an occupational category is in a period of transition. This will be especially important when the category's functions overlap significantly with that of another category, or when its functions are to be taken up by another category.
- **A substantial shortage exists or is anticipated.** Though market forces may normally be the best guide for a specific occupational category, occasions can arise when planning and/or intensified training is justified. By way of example, administrative and computer personnel are generally trained outside of the health sector. However, if they are in short supply, it may be necessary to create within the health sector special training programs to increase their numbers.
- **Good data availability.** Relatively good HRH data accuracy, coverage, relevance, and the availability of a historical time series all make it easier to plan.

- **Favorable planning environment.** A country's past experience with HRH planning, and with health planning in general, will have a major impact on the importance it assigns to planning. Even when these experiences have been positive, the "environment" may not be favorable for planning at a specific point in time. Imminent government change, political instability, and other priorities may argue for delaying planning until conditions improve. The "planning environment" is, however, a minor consideration. If most criteria favor HRH planning rather than relying on market forces, then part of the planning agenda may be to create a favorable environment, irrespective of past experiences and present conditions.

The above criteria can help guide choices between planned or market-based policies but they are no substitute for experience and good judgment. In most situations planners and policy makers will find some criteria favoring each alternative, and it will be up to them to decide which ones deserve the most weight. Moreover, the choice is not between one extreme alternative or the other. A good plan will unavoidably take into account market forces, and indeed they will constitute one of the major inputs into policy. And for those who rely primarily on market signals to guide policy, these signals will ultimately be converted into plans affecting enrollments, employment, and personnel deployment.

So the true question is not "Why plan HRH?", but when and to what extent should planning be part of equation. Though much HRH planning has had limited success in the past, the intrinsic limitations of market forces in many situations give us no alternative but to try to do better. As long as access to health care is a high priority, as long as governments pay much of the costs, and as long as market signals are slow in coming and correction is slow and costly, we must continue our attempts to plan. For the consumption of goods and services deemed non-essential by society, we can allow the market to work its will; for the rest, some measure of planning is essential if we are to avoid the high costs the market will periodically impose. Fortunately, the prospects for improved HRH planning in the future are good!

## Reference

1. Frenk J. et al. **Mdicos, educacion y empleo**. Mexico: Universidad de Guadalajara, 1994: 273.
2. Noren J. A national physician workforce policy. *Public Health Rep* 1997; 112: 219-221.

## Discussion

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To answer the question : "Why Plan Human Resources for Health?", we must answer first the following two questions: "What do we want to achieve from the activities of the health sector?" ; and "What do we mean by Human Resources for Health (HRH) planning?"

The answer to the first question probably is that all the activities of the health sector are directed to improve the health status of the population to a desired level within a certain period of time by utilizing available resources. To achieve this objective, appropriate policies and actions should be taken to allocate resources in a desired direction.

Now the question is: “Can market forces lead to achieve above objective of the health sector?” If markets are perfect and competitive, market forces would have been the most efficient method to allocate scarce resources. However, unlike other sectors, the health sector possesses some characteristics which lead to imperfections and distortions in the market for human resources for health, i.e.,

1. The demand for the work-force is derived from the demand for health services which are required to improve the health status of the population. The relationships among health needs, service needs and resource needs are complex. Many social, economic, political and cultural factors greatly influence these relationships. That is, the relationship between resource needs and service needs, vis-a-vis service needs and health needs are not one-to-one.
2. Differences in the objectives between health sector and health care providers. As stated above, the health sector’s objective is to improve the health status of the population. On the contrary, the objective of the provider is to maximize the return by providing the health services.
3. Under the market set up, professionals have a great role to induce demand for their services such as examinations, hospital treatments, consumption of drugs. Some of the services may be unnecessary.
4. Knowledge about health needs is imperfect; knowledge of which services correspond to needs is also imperfect; and the relative contribution of health services to needs is not well understood. In such circumstances, services available, services consumed and services required would not be equivalent. But they are equivalent if the market is perfect.

The degree of imperfection is found relatively more in developing countries compared to developed countries. The imperfection leads to differences between market prices and shadow prices. Therefore, markets generally can not allocate scarce resources efficiently in the desired direction to improve the health status of the population.

In the above discussions, I want to argue that coordinated efforts are needed to guide all activities relating to human resources development and their utilization to achieve the objectives of the health sector. In this regard, HRH planning is required which can coordinate all activities relating to HR development and utilization.

HRH planning can be defined as a systematic attempt to coordinate all actions relating to the production, utilization and management of the health work-force taking into account inter-relationships and inter-dependencies between services and categories of personnel. The HRH planning will determine the need for human resources; make efforts to produce required human resources and show the way to make appropriate use of human resources. It may be impossible to ensure consistent development of the right person at the right place. But the utilization of human resources can dramatically be improved through HRH planning.

The criteria for appropriate use should be cost effective and pertinent. The cost effective criterion means the least costly mix of personnel in an effective way; the pertinent

criterion means the use of professionals is consistent with the need and with capacity (adequate match between providers' competencies and the requirements of the job to which they are assigned).

HRH planning provides the policy makers with options for action. It shows the likely consequences of each option in terms of the services available, distribution of services, costs, supply and requirements of the work-force, etc. In the absence of HRH planning, policy makers have a tendency to make policy and decisions based on subjective considerations. But, HRH planning helps policy makers formulate policy and decisions based on objective considerations.

In the past, efforts in HR development and HR planning in most countries were piecemeal, un-coordinated and project specific. Absence of a coordinated effort is probably one of the key reasons why HRH planning had limited success. Previously, doctors used to dominate in the health sector by making almost all the decisions in that sector.

Currently the situation is changing. Other professionals like economists, public health engineers, sociologists, statisticians, etc. are contributing significantly to the health sector. Involvement of other professionals will increase the efficiency of the health sector. Moreover, NGOs (Non-Government Organizations) and the private sector are in constant competition with the public health sector. All these factors compel the public health sector to increase efficiency. Therefore, the public health sector will make every effort to improve efficiency. HRH planning can be one of the instruments to increase efficiency by utilizing resources optimally.

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Tom Hall makes a compelling case in the lead article for planning human resources for health. International trends towards embracing market forces in all sectors of the economy and the current centrality of the marketplace economic approach in health policy discussions and decisions invite a dichotomy of HRH planning versus market forces. Although dichotomizing may appealingly sharpen the discussion of an issue it unfortunately limits a fuller exploration. Planning HRH and the role of market forces should be explored in the broader context of healthcare workforce development. The latter should be viewed as part of health sector reform activities. This enlarged approach to the topic leads this writer to advance the following propositions.

1. Health workforce planning should be a public sector activity and should not be left to the private sector or to care providing and educational institutions. Market forces do not achieve an equitable distribution of appropriate healthcare personnel. Planning failures such as those cited by Tom Hall i.e. functional and geographic distribution - and I would add gender distribution - will not be solved by the marketplace.
2. The production or training of health professionals can be a public or a private sector activity as long as education and training are subject to national standards in order to ensure a minimum level of quality.

3. Planning and training the health workforce - whether done in the public or private sectors - do not automatically result in improved patient care and patient satisfaction unless these workers are properly managed. This means providing health workers with work conditions and supportive supervision that stimulates them to excel, motivates them to do a quality job, and gives them professional satisfaction. Competitive market forces may be better positioned to manage the health workforce, to improve clinical outcomes and to achieve greater patient satisfaction.

From a human resources development perspective: (i) planning is essential and I join Tom Hall's supporting arguments adding that planning human resources for health falls within the role of the government; (ii) producing or training the workforce can be - and is being - done by public and private institutions, by educational and by provider institutions, and by professional associations but national standards should be formulated, agreed on and consistently applied; and (iii) satisfactory performance and productivity at the work place level (compensation systems, incentives, supervision, career ladders) is usually not attained in public sector institutions.

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This paper by Dr. Tom Hall explores, on the basis of past experience, the challenges involved in the training and use of health personnel. Both market forces and deliberate planning have influenced the current situation in countries.

The problems encountered in the types, numbers, qualifications, and distribution of health personnel have clearly resulted mainly from market dynamics.<sup>(1)</sup> These are driven by the influence of money and purchasing power, as the determinants of actions, rather than human needs. This can be seen strikingly in the United States, where market forces have long shaped the national health system. In response, efforts have been made, at both national and state government levels, to implement planning through "health systems agencies". In one form or another, health planning has been attempted in nearly all countries. Efforts have probably been greatest in the developing countries.<sup>(2)</sup>

As Dr. Hall cogently concludes, the deficiencies of market forces "give us no alternative but to try to do better" with health planning of human resources for health. This need not be an "all or none" decision, but rather a judicious refinement of national need-based planning with some adjustment for market realities.

Dr. Hall's paper does not discuss the necessity of sound economic support for personal health services in all countries. If planning, in order to respond to diverse human needs, is to be effectively carried out, such support is obviously essential.<sup>(3)</sup> The mechanisms for providing such support require choices among many options, with varying degrees of equity. World experience has shown wisdom in the use of general tax revenues, combined with social security financing, to assure economic and political stability.

**References:**

1. Mejia A. "Health manpower out of balance". *World Health Statistics Quarterly* 1987;40: 335-348.
2. Reinke WA, ed. **Health planning for effective management**. New York: Oxford University Press, 1988.
3. Abel-Smith B. Financing Health for All. *World Health Forum* 1991;12:191-200.

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**1. Introduction**

The subject of Dr. Hall's paper, human resources for health (HRH), is important for health care systems in all WHO countries. In Australia, for example, expenditure on labour in the health industry, even if confined to paid labour, greatly exceeds the financial outlays for all other inputs combined. The human resources used in the health care system are critical to the current relationships between inputs and outputs (the health production function) and their improvement over time. Of course, not all workers employed in the health industry are trained in health-related occupations (e.g. accountants or engineers in hospitals), neither are all workers in health-related occupations employed in the health industry (e.g. occupational health nurses in manufacturing industries).

The perspective for considering HRH adopted here is that of an economist. The fundamental economic problem is scarcity. Since not all commodities are available to decision-making agents as and when desired, choices have to be made: generally there are more desirable activities than resources to undertake them. Economics emphasises that in making choices economic agents take into account both the costs and the benefits relative to alternative courses of action. Changing the distribution of costs and benefits alters the pattern of incentives (or disincentives) facing economic agents, such as doctors, or patients: incentives are expected to influence actions.

In WHO's consideration of HRH three broad areas have been identified:

- human resource planning i.e. the process of estimating the number of persons and the kinds of knowledge, skills and attitudes they need to achieve predetermined health targets and ultimately health status objectives.
- human resources education and training i.e. all aspects related to the basic and post-basic education and training of the health labour force, noting that these aspects are not solely the responsibility of the health system; and
- human resources management, i.e. ensuring that health personnel are used efficiently and effectively (and that their skills are maintained, evaluated and upgraded to meet evolving job expectations).

In practice, the three areas are not entirely separable. Dr. Hall's paper covers aspects of each area, but inevitably some matters are not covered, or only cursorily. I agree with much he says, but concentrate here rather on where our views differ, at least in degree.

## 2. Five Points Made by Dr. Hall

First, 'planning' can mean different things to different people and in different contexts. It is not always clear just which meaning is being used at different points in the paper, or that they are consistent. For example, planning may refer to conscious authoritative decisions (e.g. by governments) to say, determine the number of training places or hospital beds; or have a more market, bottom up or individual emphasis-to assist individual consumers or producers of health care services to make more informed choices and adjust to change. Planning can be a long term, comprehensive process or more ad hoc and piecemeal. Recent years in Australia have seen an increased emphasis on private sector provision, the responsibility of individuals for their own health and the health responsibilities of employers, which may imply a shift towards the market from governmental planning.

Secondly, the typical choice in planning HRH is not wholly the market or wholly non-market planning, but a combination of both. There is a continuum rather than a dichotomy. Dr. Hall's paper contains little on how best to combine them, what relative weight to give to either in differing circumstances or the appropriate criteria for making such decisions.

Thirdly, I strongly agree with Dr. Hall on the increased priority for HRH management, and hence management training. In most, if not all, health systems, technical and allocative efficiency could be significantly improved (as the introduction of hospital case mix has demonstrated in Australia). Compared to pre-service education in education institutions training while in employment is likely to be more directly relevant to work requirements, a balance between employer and employee aspirations and less demanding of data: market responses are likely to be more significant relative to (government) planning. The interaction between education and training, pre-service and in-service, off-the-job and on-the-job, is little discussed in the paper.

Fourthly, the paper discusses the techniques of HRH (which are important and are improving), but there is less emphasis on power and the potential of HRH to reinforce or disturb existing power relationships. HRH is not only technical, but can affect the capacity of different groups to influence resources and agendas (both public and private) e.g. in Australia, moving the training of registered nurses from hospitals to universities or including optometrical services within the national health insurance programme.

Finally, Dr. Hall raises the balance between 'plan product' and 'plan process' and the weak linkages between planners and decision makers. This is an important area where further work is required at both the policy and the practitioner level. Our studies for the Australian Health Ministers Advisory Council found that a range of factors can act as barriers to, or promote, the use of research, evaluation and planning studies in policy or practice. The factors lie within three broad areas: the decision-making processes themselves; the research settings (which can vary from universities to governments, from hospitals to private consultants); and the web of linkages, which can promote (or inhibit) effective and continuing interaction between decision-makers and researchers. There was scope for considerable improvement.

### 3. Four Other Points

First, the paper focuses on the supply side. Yet, if the purpose of production is consumption or use, then the demand side is critical. The demand for health labour services is a “derived” demand, derived initially from the demand for health services and more fundamentally from the demand for “health”. The more accurately the ultimate output(s) to be maximised can be identified, measured and valued the easier is identification of the relative contribution of different inputs, including health labour.

Secondly, health outputs can generally be produced, especially in the longer term, using various combinations of different health labour categories; and using various combinations of labour and other co-operating resources. Also the health sector is not homogeneous but very diverse (compare for example, neurosurgery and geriatric care). HRH decisions require specification of these other inputs and how their price, quality and availability are expected to vary. In most countries substitutability and complementarity require further investigation. Even if “health” is the output to be maximised (and in practice the aggregate social welfare function is likely to include objectives other than the maximisation of health itself which impact on resource allocation in health and specifically on HRH e.g. equity considerations or expansion of educational opportunities), it does not necessarily follow that all the relevant inputs are within the health sector (e.g. constructing safer roads or legislation against drink driving). An Australian surgeon stated he saved more lives through his road safety advertisements than his surgical career.

Thirdly, the relative costs of HRH production and use receive little attention, despite their importance for economists. Technological change can also be important: in Australia, for example, the effect of technological change on nurses has generated considerable discussion.

Finally, HRH planning can adopt a static focus, whereas human resource planning, education and training, and management are subject to many influences and can change substantially, sometimes quickly. Economists tend to stress adjustments: they anticipate greater flexibility as more fixed factors become variable, knowledge increases and time periods grow. Of course, adjustments in supply or demand, including for HRH, are not always immediate, are not always the same in different circumstances, and are not always simple. However, disequilibrium situations tend to be corrected more quickly when reaction times are shorter, the elasticities of supply and demand are larger and information is more widely available. Neither ‘planning’ nor the ‘market’ will be free from error **ex post**, raising the issue of who bears these costs, both initially and subsequent to any redistribution (individual producers or users in the market case?; governments in the planning case?).

#### References:

1. Feldstein PJ. **Health care economics**. New York: John Wiley and Sons (latest edition): especially chapters 13, 14, 15 and 16.
2. Folland S, Goodman AC, Stano M. **The economics of health and medical care**. New Jersey: Prentice Hall, Englewood Cliffs, 1993. (especially chapters 19 and 20).
3. Smith CS. **Review of WHO’s activities in the area of human resources policy analyses**. Geneva: World Health Organization, 1992. (Document HRH/92.12).



4. Smith CS. **Economic feasibility of methodologies for multi-professional policy and planning development of human resources for health.** A background paper for WHO Human Resources for Health Conference, Jakarta, June 1993.
5. Smith CS, Davis D, Fletcher A, Fox C, Ridoutt L, Smith JS. **Inventory of health labour force research studies in Australia, 1980-1991.** Canberra: Australian Government Publishing Service, 1992.
6. Smith CS, Davis D, Fletcher A, Fox C, Ridoutt L, Smith JS. **National Health Labour Force Research Program, Volumes 1 and 2: report to the Australian Health Ministers' Advisory Council.** Melbourne: Graduate School of Management, Monash University, 1992.
7. Smith CS. Educating public sector managers: is the MBA the way to go?. *Aust. J of Public Admin* 1991;50:187-190.
8. Smith CS. Health services management education in South Australia. *Aust Health Rev* 1995;18: 15-25.
9. Smith CS, Crowley S. Labor force planning issues for allied health in Australia. *J Allied Health* 1995;24:249-265.
10. Steering Committee for the Review of Commonwealth/State Service Provision. **Reforms in government service provision.** Canberra: Australian Government Publishing Service, 1997.
11. Stoddart G, Barer ML. **Toward Integrated Medical Resource Policies for Canada:** background document, paper 91-7; appendices, paper 91-8; Working Paper Series. Hamilton, Ontario: Centre for Health Economics and Policy Analysis, McMaster University, 1991.

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With his characteristic lucidity, thoroughness and an unrivalled expertise distilled from many years of experience in many parts of the world, Tom Hall has given us a very useful analysis of the past and, in part, continuing limitations of formal approaches to health workforce planning. He has identified factors which now and in the future will enable planners to provide policy makers, service managers and training authorities with more useful, longer term projections and alternative scenarios as aids to decision making. And finally he presents a series of situations in which deliberate planning by some one or other is particularly necessary if a community is to minimise waste of training resources, and avoid inadequate or inappropriate production or provision of trained personnel.

Seeing here in our western Pacific region the adverse effects of "market forces" I am coming to the opinion that the more market forces are permitted to operate the greater the need for workforce planners to monitor the situation and generate policy proposals to mitigate these adverse effects! As examples of these untoward situations one could point to the gross over-production of inadequately trained medical practitioners in Cambodia-the necessity for government medical school staff to generate extra income by private coaching students played a significant role in this; the continuing failure of recent graduates from the Pacific island countries (PICs) to return to their home countries on completing their professional training in countries such as Australia, New Zealand and elsewhere; and the

recent changes to nurse registration regulations in New Zealand resulting in the seduction of trained nurses from PICs already facing severe shortages of nursing personnel.

Looking back over the sorts of workforce planning problems I encounter during my workforce planning assignments, there are few which could be solved by a “market forces” approach. For example, that approach has very limited practical application in such situations as the following. :

- Staffing problems arising from commitment of governments to civil service restructuring policies, demanded by international lending agencies. These policies-particularly “down-sizing” or, euphemistically, “right-sizing” - tend to be administered by bureaucrats with no or little knowledge of health service staffing imperatives.
- Emergence of unforeseen adverse effects of policies recommended by foreign nursing consultants with insufficient attention to longer term implications. For example, very serious shortages of nursing personnel have resulted from “up-grading” of basic nurse training to university diploma level - the relatively few school leavers qualified to enter university courses opt for courses leading to careers other than nursing. Governments on the brink of insolvency cannot offer competitive salaries to attract such students into nursing careers.
- Problems in securing adequate intakes to the limited pre-service and post-graduate training places available at the preferred regional training centre - both the University of Papua New Guinea and the Fiji School of Medicine offer pre-service courses for a range of health occupations and also post-graduate medical training programs - but because of “Law and Order” problems some PIC authorities are unwilling to send students to Papua New Guinea. Consequently the limited student accommodation, teaching resources and availability of patients for clinical teaching in Fiji are all currently overloaded.
- Unrequited professional, career and remunerative aspirations of health personnel. Generally Pacific island country health authorities rely heavily on auxiliary medical practitioners (Health Officers, Health Extension Officers etc.) and experienced nurses to act as ‘general practitioners’ for their rural populations-these categories of staff are becoming increasingly dissatisfied with their career prospects, remuneration and working conditions. Again fiscal and political constraints preclude increased government expenditure, and rural subsistence level communities cannot afford to pay for needed services.

It is perhaps unfortunate that the benign influence attributed to “market forces” by the original proponents of the now somewhat anachronistic theory of *laissez faire* is not evident in many fields of human enterprise, and this is in part due to the fact that “perfect markets” do not and indeed cannot exist, particularly in complex systems such as those concerned with the staffing of health services and the delivery of health care.

A national or regional health care system, having to produce and distribute “health” as its product - a product embodying both a personal asset and a “public good” - at an affordable price, demands planned control of inputs and input costs, with human resource inputs constituting one of the largest and generally most expensive inputs. The question facing health authorities is really is not the simplistic “workforce planning versus market forces” issue, but rather, “Who does the controlling?”

Because health care delivery involves both expenditure of very large amounts of public resources and the distribution of a public good, I argue that government has the responsibility for controlling inputs and input costs. This can be done both in systems with a very high government participation in direct service provision and in the mixed provision systems found in most countries these days. The government health authority is generally the most appropriate location for planning this regulatory activity.

The role of the health workforce planner in what to me is an essential component of a central government health authority responsibility embraces at least three major functions, briefly described below:

**Monitorial function** - establishment, maintenance and monitoring of databases covering the size, composition and deployment of the national or regional health workforce (in both government and non-government sectors), and the categories, numbers and progression of students through the various training ‘pipelines’; monitoring of international or inter-regional activity which may impact on the future size and composition of the local health workforce.

**Advisory function** - advising top level corporate management within the health authority on policy matters relating to production, employment and deployment of the national or regional health workforce. This entails formulation of strategic and tactical options reflecting estimates and projections of staffing and training requirements, workforce and training attrition, consideration of alternative sources of personnel procurement, staffing and training costs and their funding.

**Liaison function** - liaison with lower level in-country health authorities, other relevant government agencies (for example ministries of finance, education and the civil service department), professional associations, health professional registration and licensing authorities, relevant training institutions (of all types - directly under health authority control, controlled by other government agencies, non-government training agencies et cetera), developmental assistance agencies - in short all agencies which play a significant role in the production, employment and deployment of health service personnel.

By way of conclusion, I agree with Tom Hall that a “market forces” approach may have some place among the policy options to be considered by workforce planners, but anyone who suggests that a such an approach to staffing health services offers *per se* a viable and sufficient alternative to painstaking health workforce planning has perhaps been misled by the meretricious claims of some proponents of *laissez faire*.

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The article of Dr. T. L. Hall is excellent. It seems to me like taking delight in a great meal. It should also be a great moment to share some points from my views and experiences as follows:

1. Never allow free market forces to work and direct medical and health services alone, as is done with general goods. Medical and health care activities always deal with human life which closely rely on morals and ethics. So, inevitably, health planning and human resources for health(HRH) planning are crucial.

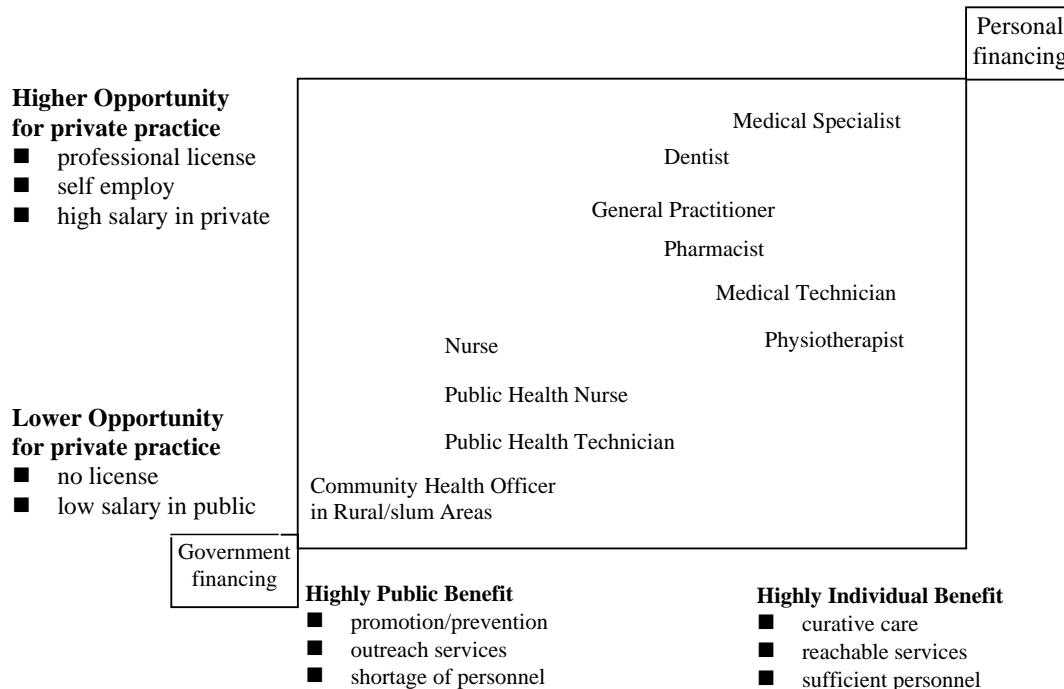
2. Free market mechanisms in HRH production and utilization tend to contribute to overproduction of some categories of the workforce, for instance medical specialists. Maldistribution and irrational utilization of resources as well as high technology in health care could jeopardize the equity. Meanwhile, unacceptably, compartmentalization and specialization will serve the needs for some, rather than for all.

3. According to Thailand's experience, HRH planning has been an integral part of health planning incorporated in the National Economic and Social Development Plan for over three decades. HRH planning has been conducted separately in terms of issue-specific and organization-specific parameters, during this period. It was carried out as "managed planning" rather than following the market forces, although the factors mentioned by Dr. T. L. Hall have occurred in Thailand. Fortunately, implementation of those matters showed positive contributions to the HRH situation, regardless of the methods of HRH planning.

- Some categories such as medical doctors, dentists, pharmacists, etc. are produced at great cost to the government. Production plans and deployment measures bringing them to rural areas have been carefully undertaken without market influences. This leads to optimal quantity of the required personnel. Nevertheless, the proportion of specialists has increased rapidly. Meanwhile, the country still encounters a shortage of medical doctors in rural areas. So HRH planning has to be introduced properly in the meantime.
- Production of widely-used categories of HRH such as nursing personnel, has been fivefold to medical doctors (or 97,932 nurses to 60 million population). Most of them have been selected from local students, who graduate and then are deployed to their hometowns in either urban or rural areas. Furthermore, 30,000 community health officers who are auxiliary health personnel, have been produced and distributed for health prevention and promotion activities as well as for basic medical care at the first line health service facilities throughout the country, particularly at the sub-district level. Such decision making is based on HRH planning which subsequently contributes to the desired level of medical and health services quality of the country.

4. Today, global circumstances have changed rapidly. Socio-economic as well as health problems follow these changes and become more complicated. Non-communicable diseases increase, social pathology emerges, HIV/AIDS infection spreads widely, and accidents emerge as a result of this modernization. This leads to requirements for new categories of health personnel, such as emergency medical technicians (EMT), and child and elderly care workers. Meanwhile, existing categories need to be changed in relation to their updated roles. Some might be overpopulated if maintaining the current rate of production, while some may result in shortages. These may be examples that market forces are unable to respond promptly. HRH planning should be carefully considered in order to develop decision making processes for choosing optimal and relevant alternatives. Products of planning would be effectively utilized by emphasizing the participatory planning process where the stakeholders should be actively involved.

5. Finally, colleagues and I gained experience with HMD research (1997) which proposed policy options in HRH production. This study was concerned with liability in production expenditure to the benefit of society and HRH themselves. We concluded that HRH with higher public benefit should be subsidized more from the government sector, while those deriving a highly individual benefits should be undertaken through personnel financing.



This approach might contribute to HRH planning to some extent. Proper planning on HRH should reasonably clarify the doubt of policy makers.

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I wonder why health personnel planning has stopped to be attractive to me, at least in the way it is usually presented. By planning, I mean here mainly forecasting numbers of health personnel required, by category, and to a certain degree describing what is expected from each category, although I often felt that quantitative planning was the prime concern of expert planners.

Who would deny the advantages of understanding why a certain action is needed before implementing it? Conceptually, planning is a noble task. It requires indeed a sense a vision and in the case of health the understanding of the multiple determinants that interact to influence the evolution of a health system.

The development of a health system is very complex particularly when one considers what needs to be done to improve simultaneously relevance, quality, cost-effectiveness and equity. The planning of a health care delivery system that can cope with the above-mentioned values requires lots of creative thinking and it may be that the planning of the workforce to serve such a system is largely seen-rightly I believe-as only a means towards that end. Health policy makers may-consciously or unconsciously-decide to provide privilege attention to the end, or, in other words, sort out the end first. In my view, that is why everything else comes next or never comes a real issue unless what is more important has been sorted out.

Having said this, I wish to share a series of personal views based on experience and observations worldwide.

1. Plan workforce while plan services. I think the recommendations for health personnel planning would have greater chance of being taken into account at a time health services are being planned. In other words, don't do it in isolation from health services planning and development.

I feel some reluctance-although rarely openly declared-for the creation of health personnel planning units, but less for setting up health planning units with responsibility for personnel planning.

2. The health personnel of tomorrow will be different. How can one reasonably plan for "x" number of doctors when one has no clear idea of what the future doctor will or should be?

A plan should have a strong qualitative component. Assumptions must be proposed-backed with good justifications, considering future challenges for the local health system-on the optimal profile of the doctor, for instance. The likely scope of future tasks and responsibilities of health professionals must be introduced and matched against health needs and priorities, which will also need to be constantly reconsidered. Flexibility and negotiation are highly needed, which may somehow contradict with the relative rigidity of planning procedures.

3. Create coalition with main stakeholders. Who has an interest in personnel planning? In my view, in the case of health personnel there are at least three main stakeholders that need to be intimately involved in any planning exercise: the academic institutions with major responsibility for training and research, the professional associations with interest in the professions' regulation, and the health care organizations which will ultimately welcome, use, pay, reward,... the health personnel.

One has to understand the specific agendas of these stakeholders and work out viable and acceptable compromises, to ensure that a plan for the workforce has best chances to be eventually carried out.

4. Make planning attractive. I personally don't think manpower planning is very attractive at the onset as a science or methodology except for passionate experts in forecasting exercises and mathematical modeling. The doers, the practitioners, and even the health managers or political leaders-- who most of the time are expected to be accountable for visible achievements or attractive decisions-- prefer to engage themselves in action and then create favorable conditions within a given course of actions to decide on a workforce planning exercise. The situation, in my view, is particularly relevant in developing countries.

Therefore, if planning does "sell", don't force. Don't make it an absolute prerequisite to an action plan. In contrast, do not hesitate to support and get involved in concrete actions, whatever that might be in a given circumstance, but at the same time ensure that provision is made for the creation of a momentum whereby the need for long term planning of manpower can be identified and eventually be addressed as key actors will realize that only sound manpower planning can lead to sustainable and efficient health development.