It is an established fact that the 11 Member States of the South-East Asia Region are home to approximately 25% of the world’s population and bear almost 30% of the global disease burden.

In this context, the World Health Report 2006 highlights the main role to be played by the health workforce (HWF). Countries need to overcome the shortage of HWF that has been identified as the most significant constraint for efforts to reach the health-related MDGs. Every country is unique in its needs and capacities. As a result, the whole process of strategic planning and implementation should be based on evidence generated through HWF situation analysis that is flexible and interactive.

These guidelines have been developed based on the WHO/SEARO “Regional Strategic Plan for HWF Development” and are designed to serve as a tool in developing country-specific HWF strategic plan.
Regional Guidelines for Development of Health Workforce Strategic Plans in Countries of the South-East Asia Region
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<th>Acronym</th>
<th>Description</th>
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<tr>
<td>AAAH</td>
<td>Asia Pacific Action Alliance of Human Resources for Health</td>
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<tr>
<td>CSP</td>
<td>Country Strategic plan</td>
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<tr>
<td>CBO</td>
<td>Community Based Organization</td>
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<td>CBHW</td>
<td>Community Based Health Workers</td>
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<td>CHV</td>
<td>Community Health Volunteers</td>
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<td>GHWA</td>
<td>Global Health Workforce Alliance</td>
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<td>HRH</td>
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<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>NA</td>
<td>Needs Assessment</td>
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<td>NGO</td>
<td>Non-Governmental Organization</td>
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<td>NHP</td>
<td>National Health Plan</td>
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<td>SEARO</td>
<td>South-East Asia Regional Office</td>
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<td>SEA Region</td>
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<td>WHO</td>
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Health workforce (HWF), which is defined as all people primarily engaged in actions with the primary intent of enhancing health(1), is the most important asset of the health system. Health systems can be strengthened only through effective HWF planning, development and management. The World Health Report 2006 “Working Together for Health” clearly reflects the pivotal role of HWF in achieving positive health outcomes in Member States.

Health workforce: challenges and response

The South-East Asia (SEA) Region has been challenged with emerging infectious diseases such as SARS and avian influenza as well as natural disasters in the past two decades(2). The health workforce in Member States of the SEA Region faces the growing burden of both acute and chronic noncommunicable diseases that demands a continuum of care involving HWF inputs. HIV/AIDS, TB and malaria are challenges that need to be prevented and controlled. It has become important that HWF is able to provide preventive measures as well as deliver quality health care besides responding to national disasters that can cause health facilities to lose their routine functionality. There is always a call for preparedness for public health emergencies and emerging infectious diseases. Developments in biomedical technology have made tremendous advances in diagnostic and curative facilities that require labour-intensive health-care services. Moreover, growing patients’ expectations and needs are also making new demands on the health workforce. To add to the list of health workforce problems, internal migration (rural to urban settings) and external migration (poorer to richer countries) of trained health professionals deprive the health system of its most valuable assets especially in developing countries where the need is critical.

Mindful of these HWF problems, the WHO South-East Asia Regional Office developed the "Regional Strategic Plan for Health Workforce Development in
Countries of the South-East Asia Region” that was endorsed by the Governments of all the eleven Member States at the Twenty-fourth Health Ministers’ Meeting and the Fifty-ninth session of the Regional Committee held in Dhaka in 2006. The Dhaka Declaration on strengthening the health workforce in countries of the South-East Asia Region and the Regional Committee resolution SEA/RC 59/R6 recognize the crucial importance of human resources for health. They also outline the commitment of Member States to develop national policies and regulations to adequately enhance the number of HWF in service delivery through systematic development of medium-term and long-term plans.

The Member States of the Region are at different levels of development in HWF strategic planning. They thus need to systematically review their existing HWF situations and develop evidence-based national strategic plans for HWF development in line with their national health policies and health development plans. To answer the above-mentioned needs, this guideline has been developed, based on the WHO/SEARO “Regional Strategic Plan for HWF Development in countries of the South-East Asia Region” and is designed to serve as a guide in developing country-specific HWF strategic plans.

Purpose of the Guidelines

The guidelines aim to assist countries of the WHO SEA Region to develop strategic plans for HWF. They should prove useful for HWF planners in ministries of health and departments of health planning and programme developers for HWF education, training and management. These can be used for HWF planning for a programme or project, health centre or a district hospital. The same steps can be taken and adapted to the situation.

Some countries in the SEA Region have already developed human resources for health master plans. It is always important to review and revise HWF plans in the context of changing demographic trends, epidemiological patterns and changes in HWF needs with the change in political and socio-cultural contexts.

These guidelines are based on the WHO/SEA Regional Strategic Plan for HWF and draw on the concept of “Scaling up saves lives”, a report prepared by the Global Health Workforce Alliance (GHWA) and also the “Regional Guidelines for HRH Master Plan”, a document prepared by the Asia-Pacific Action Alliance for HRH (AAAH). The guidelines portray a step-by-step development of evidence-based HWF planning bearing in mind that it consists not only of health professionals in the public sector but also community-based health workers and volunteers who are the backbone of health service delivery at the grass-roots level, especially in the SEA Region.

The WHO SEA Region is committed to achieve the MDGs and is revitalizing the primary health care (PHC) approaches for health systems strengthening. It is timely and appropriate to develop an HWF strategic plan with emphasis on PHC approach, based on evidence obtained from the actual HWF situation and HWF needs, assessment and projections. It is a reiterative planning framework whereby results
of monitoring and evaluation will contribute towards revision of the strategic plan to be more relevant to the prevailing health situation and HWF needs of a country.

**The strategic planning framework**

The strategic framework consists of six steps which are:

1. Health Workforce Situational analysis;
2. Problem Identification & Prioritization;
3. Projection of HWF Needs and Demands;
4. HWF Policy Review and Identification of Strategic Areas;
5. Formulating the Strategic Plan; and

**Figure 1: Health Workforce Strategic Planning Framework**

The framework consists of six basic steps crafted around a double-layered circle as indicated in figure 1.
Health workforce (HWF): The central circle with three small circles within it represents the HWF in totality, consisting of public and the private sectors, as well as the community-based health workers and volunteers. The entry, sustainability and exit from the health workforce are governed by the following six major factors:

1. Education/Training;
2. HWF management;
3. HWF financing;
4. HWF policy;
5. Partnerships; and
6. Leadership

Situation analysis of HWF: Often the lack of reliable and updated data and information restricts policy-makers to develop evidence-based HWF planning. The guidelines will address data and information regarding the six major factors (represented by the six components of the outer circle) in Figure 1, which influence HWF entry, exit and sustainability as per the HWF situation analysis.

Problem identification and prioritization: The findings of HWF situational analysis will identify HWF problems that are currently being faced and thereby help in prioritization. Member States in the SEA Region are diverse in socioeconomic development, political and cultural background and it is the prerogative of each country’s HWF planning team to decide on the dataset and information it thinks is best analysed to reveal its country’s HWF priority needs.

Projection of HWF needs and demands: After HWF priorities have been identified, a projection of HWF needs and demands needs to be made, such as the required numbers, types of health workers, distribution and how the need will be met, the institutional capacity to scale up production/training, and how the managerial problems will be dealt with. Thus, “HWF supply and demand forecasting/projection” is carried out using tools/instruments, to obtain detailed HWF needs. It helps in throwing light on the possible key areas to focus on and develop strategic areas and directions.

HWF policy review and identification of strategic areas: HWF development is a political agenda. Once the problems are prioritized, the plan for health workforce should be formulated within the context of National Health Development Plans of countries. This would involve examining the general workforce-related legislations, rules/regulations/licensing policies and identifying any incompatibilities within the range of possible strategies to be proposed in the HWF strategic plan. It is suggested that a healthy balance be maintained between the implicit and explicit health policies and a policy dialogue be contemplated, if necessary, for sensitive policy issues so that the Country Strategic Plan (CSP) for HWF can be developed, adopted and implemented smoothly.
Formulating the strategic plan: The CSP for HWF will consist of the vision, mission, goals, objectives, strategic areas, activities and estimated budget, and the timeframe. It is also important to consider the risks, assumptions, baseline of indicators, and targets to be reached.

Monitoring and evaluation: The plan for monitoring and evaluation has to be developed. It is an on-going process that will be refined and updated as required, on the basis of the results of monitoring and evaluation including the feedback and course correction aimed at improving the health workforce situation according to a country’s needs.

These guidelines will touch on the above topics that constitute the planning framework. The definitions of HWF and different categories are provided in the annexes that also detail the information regarding recommended tools and instruments. References are provided to enable the reader to explore further.
Situation analysis of health workforce

Countries of the SEA Region need to overcome the shortage of HWF that has been identified as the most significant constraint for reaching the health-related Millennium Development Goals (MDGs). The current HWF policies and plans need to be further strengthened and supported. Numbers of HWF that are educated are too small, there are differences in salaries between public and private institutions. Furthermore, NGOs move the HWF from the public sector to the private sector and international migration adds to HWF problems(3).

Traditional ways do not work. Hence, it is advocated that innovative ways be adopted to rapidly scale up education and training to meet the demands of national governments, and long-term investment be undertaken on education and training, supported by national and international bodies(3).

With change in epidemiological trends and demography, HWF needs have changed. HIV/AIDS, TB, malaria and noncommunicable diseases (NCD), as well as other diseases of national concern in the Region may be considered as priority diseases. Emerging diseases like SARS and avian influenza that demand labour-intensive health-care require scaling up of HWF. Insufficient capacity for HWF training, inadequate long-term financial support, migration and unjustified control of HWF production by professional associations contribute to scarcity in some categories of HWF.

Incomplete information on national HWF situation and lack of uniformity in the classification and standardization of data, together with a decentralized framework, constrain the projection of HWF needs and formulation of appropriate national...
HWF policies and strategies. Evidence-based planning for HWF is only possible by analysing the current situation and assessing the country’s needs against existing international or regional benchmarks. It involves analysis of internal and external environments that influence HWF capacity and performance.

1.1 Data and information to be analysed

Most of the data on HWF can be collected from the existing database, departmental archives, documents and personnel records. However, some information can only be obtained by surveys, interviews and application of assessment tools. The following provides information and data with regard to the six main factors that influence HWF entry, sustainability and exit.

Information regarding education and training of HWF: Institutional capacity for training of HWF determines the numbers and competencies of available HWF in a country. The critical need for health workers in the health system demands scaling up of HR capacity, keeping quality in mind and ensuring proper coordination with interrelated departments.

The following are the suggested information elements that need to be analysed:

1. HWF education data: relating to existing training institutions; application rate for professional health institutions; student intake; and output of health professionals, by category, by year\(^{(4)}\).
2. Identification of personnel and tasks is important for in-service education and training, and capacity building.
3. Existing professional health education: relevance of curricula to address country’s health needs, coordination between HWF production and utilization and frequency of curriculum review, update and revision.
4. Inclusion of leadership, ethical conduct, altruism, commitment, personal and professional development programmes, team work, partnership building and adoption of lifelong learning practices and existing system for continuing medical education in the curriculum.
5. Existing facilities for personal and professional development of faculty.
6. Existence of accreditation system for internal and external quality assurance.
7. Professional medical and allied health education research for innovations in education to address current HWF problems.

Information regarding management of HWF: Commitment, retention and motivation of HWF is often achieved through effective HWF management.
The following information has to be taken into account:


2. System to be put in place for regular updating of HWF data.

3. HWF distribution with regard to equitable coverage, gender equity and relevance, appropriate skill-mix.

4. Data regarding HWF in other sectors such as the private sector and in NGOs; data regarding numbers of health workforce and their competencies and distribution.

5. Financing of HWF consisting of salary profile of different categories of HWF, for different geographic areas, different sectors, and incentives for manning remote health centres.

6. HWF support for housing, health-care, transportation and children’s education and welfare, working environment supportive for maximum performance; facilities and equipments, drugs, supplies and support staff.

7. Opportunities for promotion, and personal and professional development for HWF.

8. Data, information and causes for attrition, braindrain, migration pattern and presence of “ghost health workers” or absenteeism.

**Information regarding HWF policy and regulations:** HWF are workers with specialized functions and for whom rules, regulations and legislations that govern general workforce apply.

Thus, it is important to analyse the existing policies:

1. Is the HWF policy reflected in the national health policy of the country?

2. Workload indicators and staffing needs for optimal allocation and deployment of staff according to population and patient loads, geographic area, and health services provided at different levels (township/sub-district or village) according to facilities and financial support available.

3. Existence of policies regarding deployment, recruitment, transfer, promotion, grievances and incentives, including performance-based incentives and career advancement policies.

4. HWF exit policy: pension and gratuity entitlements have to be taken into account.

5. Regulations on ethical conduct, liability and quality assurance mechanisms for HWF, in both public and private sectors.

6. Relationship between HWF and public health standards at different levels of health facilities.
(7) Coordination with other related sectors/departments.

**Information regarding HWF financing:** Adequate financing of HWF development is of crucial importance for an effective and functional HWF. Failure to address and identify the funding support of the strategic plan undermines successful implementation.

The following information is suggested to be taken into account:

(1) Macroeconomic profiles, national health accounts and national health spending in relation to gross domestic product (GDP), national budget for HRH development, other sources of funding/spending for HRH\(^{(n)}\).

(2) Salary rates of different levels of HRH and other entitlements.

(3) Salary rates compared to benchmarks in other sectors.

(4) Ratio of public to private out-of-pocket spending for health.

(5) Health spending on non-salary finances: support children’s education, accommodation and transportation, etc.

(6) Multiple job holdings may result due to low salaries. Moon-lighting in the private sector is a strategy for HWF to survive in the public sector. However it can lower efficiency in the public sector.

(7) Supportive working environment with essential logistics.

**Information regarding HWF partnership:** National strategies, however well-conceived, are insufficient to deal with the realities of HWF challenges. National leadership and global solidarity can result in significant structural improvement in HWF situations. Thus, partnerships are important and the following information has to be explored?

(1) Partnerships with international developmental partners for sustainable long-term investment in education and training of HWF.

(2) Existences of coordination mechanisms for international funds to align with national health priorities and effective scaling-up of health workers’ training and education.

(3) Partnerships with academic professional bodies for quality assurance and accreditation such as the World Federation for Medical Education.

(4) Partnerships with the Global Health Workforce Alliance and the Asia-Pacific Action Alliance of Human Resources for Health form a platform for technical cooperation and sharing of expertise in HRH development. HWF observatories are a good way to share information and case studies with regard to HWF development.

(5) HWF issues relating to international migration require policy dialogue with international organizations like the International Labour Organization (ILO), International Organization on Migration (IOM), Organization for Economic Cooperation and Development (OECD), government-to-government...
negotiations in ethical recruitment practices, and partnership-building becomes important.

(6) Private-public partnerships not only for scaling-up of disease-specific programmes and community-based health workforce training and education to improve coverage, but also for training and multi-skilling of HWF.

**Information regarding HWF leadership:** Strong country strategies require both solid technical content and credible political support.

The following points need to be noted in this regard:

(1) Leadership development for HWF planning and management.

(2) Focal point for HWF, National Committee for HWF development, whether a multistakeholder mechanism is in place or not.

Countries have to decide as to what data or information are the most appropriate to analyse – data that would reflect the actual situation for effective HWF planning.

**1.2. Process of HWF situation analysis**

(1) **Setting up a multistakeholder team:** Multiple factors influence health workforce planning and production, as well as its performance within the health system. Thus, the situational analysis team has to be represented by members of the academia for HWF production, members of health services management and deployment, planning and finance ministries, professional associations, public services, local government, community representatives, and representatives from the private sector and civil society.

   The chairperson should be a senior officer who is committed to improve the HWF situation, is experienced, and has contacts to communicate with relevant ministries and stakeholders to guide the team on HWF issues.

(2) **Assignment of tasks:** The objectives of the situational analysis should be clarified and terms of reference of tasks should be clearly assigned. Sufficient time and budget should be allowed for smooth implementation and timely results.

(3) **Collection of data:** Identification of what data and information are to be collected and the method to be used for analysis have to be determined and agreed upon by the team members.

(4) **Review and analysis of data:** The collected information and data have to be assessed against the existing national benchmark (if one exists) or compared with data from countries of similar characteristics in the Region. Document reviews can also be done to confirm the HWF situation.

(5) **Compilation and analysis of findings:** The team can then sit together and compile the findings, develop recommendations and write a report on the HWF situation.
(6) Contents of the HWF situation analysis report: It is not compulsory to have a document on HWF analysis. However, having one will be useful in formulating a strategic plan. The report will not be part of the plan; only a summarized finding will form the rationale of the strategic plan. Some countries would wish to do an HWF situational analysis for review of the master plan and a report would be a document of reference for further revision and planning. The following are the steps involved in this exercise:

(1) Introduction and Background.
(2) General health profile of the country (geographical, demographical, and the socioeconomic situation).
(3) Status of health professional education and training.
(4) Status of HWF management.
(5) Existing policy and regulation for HWF.
(6) Financial matters for HWF support.
(7) Main issues and challenges in HWF.
(8) Monitoring and evaluation of HWF – indicators or targets available.
(9) Recommendations and proposals for solutions.
(10) Conclusions.
(11) References.
(12) Annexes - documents reviewed, data collected.
Problem identification

The analysis of data can help identify HWF problems. However, their scope of analysis can be expanded and validated through further investigation, such as:

1. Interviews with key informants, senior policy-makers in the ministry of health and other ministries, academic institutions, professional associations, bodies and councils.
2. Focus group discussions with community leaders and clients of health services can give maximum results.
3. Surveys or discussions with health workers from different levels can give information regarding actual situation of HWF management problems.
4. SWOT: (strengths, weaknesses, opportunities and threat analysis) and other analyses.

2.1 Problem prioritization

Once data and information have been analysed, it is important to establish criteria for prioritizing the problems. The following criteria can be considered:

- **Priority-setting according to national health priorities and concerns:** Workforce development and management is a political agenda and it is important that political commitment and ownership is in place and the remedies address the national priorities with focus on poverty reduction.

- **Priority-setting through the primary health care (PHC) approach:** The PHC approach serves as a tool for achieving health for all through
improvement of equity in health, active involvement of the community, multisectoral collaboration, use of appropriate technology and cost-effective interventions(7). The HWF comprises all individuals working with the intention to enhance health. The PHC approach encompasses involvement of other sectors (public, private, NGO) and the community. The participation of CBHWs and CHVs is a manifestation of partnership with the community.

- **Priority-setting with the aim to attain health-related MDGs:** Most Member countries are committed to attain the MDGs and have agreed that health-related MDGs can only be attained through appropriate HWF development(9).

- Ample evidence shows that better health coverage by community-based health workers is the key to attain the MDGs. Therefore, it is proposed that immediate and rapid scaling-up of community health workers is undertaken, and mid-level public health managers are trained, paid, supervised and deployed according to need.

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**MD Goal 1: Eradicate poverty and hunger**
Empowering nationwide community health workers and general practitioners who are the frontline health-care givers with appropriate training for detection of underweight children under five years, health education, training on healthy diet for midwives and CBHWs will be priority agenda items for HWF development to reach the MDG goal 1.

**Goal 4: Reduce child mortality**
Pneumonia is a significant cause of child mortality. There is growing evidence that treatment of pneumonia at home is as good as treatment in the hospital. CBHWs will be the key actors in this innovation, and other activities, like promoting the concept of ORS and breastfeeding, etc.

**Goal 5: Improve maternal health**
“Skilled birth attendants for every child birth” through increased number of auxiliary midwives trained and deployed and wherever possible, promotion of institutional delivery to reach this goal.

**Goal 6: Combat HIV/AIDS, malaria and other diseases**
Depending on the disease burden and the availability of resources, HWF planners need to forecast the need to face the challenges of HIV, TB and malaria in an integrated manner through disease surveillance and management.

**Goal 7: Ensure environmental sustainability: access to safe drinking water and improvement in sanitation**
HWF consisting of environmental engineers are needed to achieve this goal. Use of appropriate technology that can be applied by the community should be widely promoted.
Multi-skilled teams of health workers, working in rural and urban areas, addressing priority health needs of the country, effectively promoting the importance of preventive care and tackling dual burden of noncommunicable and communicable diseases will be a top priority.

**Prioritization according to cost-effectiveness of programmes for health care:** Countries in the Region need health workers to deal with the health needs of their ageing populations.

Focusing on those categories of health workers that could reduce the need for high-cost care, such as health promoters, dieticians, trainers for physical fitness, health educators for prevention of harmful use of substances, tobacco and alcohol, and health workers in prevention and control programmes for health care of chronic conditions.

### 2.2 Suggested tools for identifying and prioritizing key HRH policy issues

The following are useful tools that can support and prioritize the HWF problems, develop HWF policy and choose an appropriate strategy to overcome the HWF problems identified.

**Problem identification and prioritization of tools:**

- Problem-tree analysis: is a diagnostic tool for prioritization of HWF problems that needs to be addressed by the strategic plan *(Annex 1).*
- Causal–Web analysis: A model approach to joint programme planning *(Annex 2).*
- Focus group discussion *(Annex 3).*
- Nominal group technique *(Annex 4).*
- Modified delphi technique *(Annex 5).*

From these analyses and the document reviews, surveys and interviews with key informants, the country planners can identify the key results or critical areas that need to be addressed. Based on these key issues, HWF needs assessment or demand-supply forecasting could be done to calculate the actual and projected needs for different categories and numbers.
chapter 3

Projection of HWF needs and demands

Health workforce planning is considered challenging as it mandates the planners to estimate the future health needs and demands based on trends of the country’s health situation, which sometimes can be unpredictable. It forces the planner to go through a systematic process to analyse the current and future HWF demand and supply for the planning period, and to take steps to match the both.

Unlike many other products, HWF production involves laborious, long periods that may range from several months to 7-8 years. Therefore it is emphasized that health workforce projections are best made long-term, but action is taken on a short-term basis. This chapter will outline the principles of ‘supply analysis and projection of supply’, ‘demand analysis and projection of demand’, and some of the tools that can be used to facilitate these activities. Once the gaps are identified, it is important to calculate the degree of gap. This requires demand forecasting and supply forecasting.

3.1 Supply analysis and projection of HWF supply

During situational analysis, the current supply of all types of HWF is analysed. The planning team has to identify and project the future supply, targeting the next 10 to 20 years. These projections can be made within the country’s existing policy framework on HWF production, and anticipating the retraction due to retirement, migration, attrition, change of profession and death.

The steps in this process include identification of specific categories of HWF as priorities for scaling up, identifying existing stock of these categories, preferably with few additional variables such as age, gender, geographic location, identifying the sources of supply, and projecting the supply. During this phase it is important to identify the net gain, adjusting for attrition, retirement and death. A simple mathematical model can be used to project the net gain.
Supply Forecasting

(1) What numbers of HWF, by category, are available currently?
(2) What is the geographic distribution of different categories of HWF?
(3) What is the attrition rate?
(4) Exit rate for HWF and its pattern?
(5) Rates of internal and external migration?
(6) Recruitments from other sources? government-to-government MoU for recruitment of HWF?
(7) What categories need to be scaled up for training?
(8) Is there institutional capacity for scaling up training without compromising the quality of output?
(9) What is the logistic support required and the faculty needed for scaling up training?
(10) How long will it take to build institutional capacity to meet the needs?
(11) How much financial support will we need to meet the supply costs?
(12) How to fill the supply gap?
(13) Does the current HWF production policy support the proposed action to meet the supply needs?

3.2 Demand analysis and projection of demand

Demand analysis will allow the planning team to project the demand for HWF over a given period of time based on the changing health scenario of the country. There are two types of demand, one from the supplier-of-health-care side (public and private sector) and the other from patients or clients. When carrying out a demand analysis, there are many other non-health factors that need to be considered. Economic growth of the country, growth of the private health sector and patients’ changing expectations are a few factors that will shape up countries’ health service demands. For example, in a country with a rapidly-expanding economic growth leading to rapid expansion of the private health sector, health trade and tourism, and demands for health workers for the private sector have to be taken into account, so that the public sector will be able to attract and retain sufficient health personnel.

3.3 Methods of HWF demand projection

There are many methods that have been developed over time for health workforce demand projection of which some are basic, while some require computer software applications. The basic methods that have been continuously used for demand projection by many countries are:

- HWF requirements based on population ratios;
• HWF requirements based on service demands;
• HWF requirements based on health system needs; and
• Workload indicators and staffing needs (WISN).

The gaps are defined mathematically in order to project the needs in terms of numbers of different categories of HWF.

**HWF requirements based on population ratios**

Many countries use this simple method to calculate the demand for some HFW categories. In this application, the number of health personnel are estimated based on the population-to-personnel ratios. The target ratio is then applied to the projected population. For example, Sri Lanka has a norm for public health midwives based on the population. The government policy in the nineties was to have one public health midwife for each 3000 population. Based on the population growth, the required number of public health midwives has been calculated and projected, and the training facilities developed to accommodate the required numbers of trainees.

**Requirement based on service needs**

This method is more comprehensive as it is based on the ‘met’ and the ‘unmet’ needs for health care. However, in this method the number of health personnel are calculated based on the unmet service utilization data and not on the true need for health services. Also, it does not necessarily take into account the relevance or quality of health services.

**Requirements based on health system needs**

This method is based on experts’ perceptions as to what type of HWF are actually needed. The cost of the demand for services becomes a secondary consideration. The potential advantages of this method are: the demand is projected based on logical estimates, and it facilitates studies on utilization of staff ratios, encourages cost-effectiveness and efficiency, and addresses concerns regarding quality of care and usefulness for high-priority care. This method of health personnel projection is useful in countries with effective government policies towards delivery of services, or countries with dominant public sectors with a strong control over the health workforce.

**Demand forecasting**

1. What types of HWF do we need most for the health system to function, according to findings of the situation analysis?
2. What tools are to be used to project the need?
3. What is the ideal benchmark and what is the current situation?
4. What are the gaps in the optimal functioning of the health system?
(5) How do we fill the gaps? Scale up production/training or scale up recruitment?

(6) How much financial support will we need to fill the gap?

(7) Does the current NHP support the proposed action to meet the demand of the health system?

Methods and tools have been introduced in the recent past to forecast the health workforce demands.

(1) **Workload indicators of staffing needs (WISN):** This is a rational method that is widely used to set the correct staffing levels in health facilities. It is useful for human resource planning and management, and gives a more detailed information on staffing needs according to the workload. It is easy to calculate the HWF needs according to workloads at different levels, such as at national, regional and health-facility levels. See reference for details(5).

(2) The **WHO model for projecting workforce supply and its requirements:** This tool consists of two microcomputer spreadsheet models for developing 10 to 30+ year projection scenarios for the supply of and requirements for human resources for health, and for studying the interactions between personnel policies, health sector costs and productivity. The models are designed for use at the national or sub-national level, and users may define their projection period in the requirements model according to their needs. The model documentation describes the required and optional data inputs, suggests ways to make data collection easy, describes the relationships among data inputs and outputs, illustrates simulated data inputs and outputs, and provides step-by-step procedures for model operation. See reference(6).

(3) In addition, a separate tool has been introduced for policy diagnosis and to generate dialogue, which will lead to a more realistic HWF planning. It is named the Soft PODD and is a software tool for online policy diagnosis and dialogue. It is used for national HWF policy development and requires input of information regarding the existing quantity and quality of existing (different) categories of HWF and provides the user with recommendations regarding HWF policy crafting. The user can add comments and have an on-going policy dialogue. It is a useful tool, provided the information input is accurate and reflects the actual (existing) HWF situation (See Annex 5 for details).

(4) The WPRO Workforce Projection Tool (WWPT) (See Annex 6 for details): This tool is an application designed for projection of HWF needs of a country or an area. The WWPT incorporates parameters such as attrition rate, population growth, projection patterns, salaries and training costs. It was developed by the HSD unit, Health Sector Development division, and Information Technology group of the WHO Regional Office for the Western Pacific.
chapter 4

The HWF policy review and identification of strategic areas

Review of existing HWF policy

Most Member States in the Region have an HWF policy included in their national health policies that is consistent with their over-all national health development plans. The HWF policy of a country is an expression of its commitment to achieve the goals set according to HWF priorities. It encompasses the framework and main strategies within which HWF development activities can be coordinated and implemented.

At this point, when priority HWF needs have been identified, it is appropriate to review the existing HWF policy and then identify the strategic areas for HWF planning.

Step 1: Examine in detail the country’s health policy framework within which the national health development plans have been developed, so the challenges of health workforce development are seen in a broader policy context.

Step 2: The existing health workforce-related legislation, regulations and policies in the country are examined in order to ensure that the existing policy environment is favourable for its proposed HRH development initiatives. Identify elements that could hinder the proposed new strategies of the HRH plan; if any such elements are detected, it should be ensured that they are addressed.

Step 3: Acknowledge that the health workforce is governed and subjected to existing rules, regulations and policies and legislation that are applicable to general workforce. Examine the general workforce-related legislations, rules and regulations,
and policies and identify any incompatibilities with the range of strategies that would be proposed in the HRH strategic plan. If any are identified, ways to overcome them and a more formal policy dialogue needs to be held to bring about favourable amendments or adopt new policies. It is suggested that a healthy balance between implicit and explicit health policies is maintained when dealing with sensitive policy issues.

**Figure 2:** Reviewing HWF policy for HWF planning

4.2 Identifying strategic areas

The HWF strategic areas are identified based on the assumption that:

- The national health development plans have been developed taking into account the need for demand and supply forecasting that is carefully examined within the country’s health policy and legislative framework;
- The planning framework should encompass the country’s HWF policy and legislative context in order to ensure that unfavourable elements are minimized;
- Calculation of the present and future demand for HWF is based on the country’s existent and projected health demands and needs are well reflected;
- The framework should also encapsulate the current HWF development capacity in terms of infrastructure, as well as academic and non-academic inputs; and
- Based on the situational analysis, the recommended actions need to be examined and inventoried as another dimension of the planning framework.

The HWF needs in the SEA Region were identified and the Regional Strategic plan for HWF development in the SEA Region was developed based on the following ten strategic areas:

**Strategic Areas for Health Workforce Development for the South-East Asia Region**

(1) Strengthening the collection, sharing, analysis and utilization of data at country and regional levels.

Step 1: Examine national health policy, HWF policy

Step 2: Examine existing HWF rules, legislations, regulations

Policy dialogue

Step 3: Identify HWF strategic areas in the existing national health policy context

Priority HWF needs
(2) Policy development, regulation and legislation based on sound evidence.
(3) Scale up health workforce production, with special emphasis on public health workforce without compromising the quality of training.
(4) Knowledge generation and management.
(5) Capacity building on HWF management.
(6) Regional partnership building.
(7) Quality assurance in training.
(8) Increasing investment on HWF.
(9) Improving the work environment for the health workforce.
(10) Development of a community-based HWF.
Formulating the strategic plan

5.1 Development of the HWF strategic framework

Once the HWF strategic areas are identified, development of the HWF strategic framework follows. Based on the regional strategic plan, the following strategic framework is given as an example below in Figure 3. There are four strategic areas:

1. Scaling up of HWF production;
2. Capacity building for HWF management;
3. Policy development, regulation and legislation based on sound evidence; and
4. Increasing investment in HWF.

These strategic areas are actually priority HWF problems. These are converted into strategic objectives and strategic activities to meet the objectives as shown in Fig 3 that forms the strategic framework.

When developing the strategic framework it is important to decide what are the expected results and which area has the most impact to bring about the results in the most effective and efficient manner within the timeframe. Again it depends on the country’s planning team to decide on strategic areas that are most crucial for strategic intervention.
5.2 Developing the HWF strategic plan

The HWF strategy is an actionplan to achieve objectives in the light of the current HWF situations and perspectives. After a comprehensive analysis of the internal and external environment, and after obtaining the big picture of HWF situation and its problems, the strategies to reach the targeted results have to be crafted. The standard contents of an HWF strategic plan are as follows:

**Contents of HWF strategic plan**

1. **Foreword/preamble:** It should be signed by the highest level of authority, as it carries weight and importance.

2. **Background and rationale:** It will describe the needs for a strategic plan for HWF, what will be the outcome, and how this plan was developed. It should consist of the summary of the HWF situational analysis and HWF needs assessment by supply and demand forecasting results.

3. **Goal:** It is a statement that describes in broad terms what the whole plan will achieve. It focuses on the important and big picture. The goal should encompass the important aspects of the policy, instead of describing it in detail.
Depending on countries’ HWF situation and the priority problems identified, the goals can vary. The following is the goal of the Regional Strategic Plan of the SEA Region for HWF development:

4 **Objectives:** The objectives focus on outcomes or outputs. The SMART principle is advocated when writing objectives. The term **SMART** stands for **Specific, Measurable, Achievable, Relevant and Timebound.** Many consider objectives as intermediate goals.

- Objective for HWF training: To achieve one skilled birth attendant per village, in 235 townships (sub-districts) of the country by the year 2015.
- Objective for HWF deployment: To ensure equitable distribution of 2 CBHWs, per 1000 population in remote areas by the end of the biennium 2010-2011, for ANC, routine immunization and primary health care.

5 **Operational plan:** It outlines the institutional mechanism to ensure success. Although many tools are available to document strategic plans, the Logical Framework Approach (LFA) is preferable as it is also currently used by WHO programmes to ensure results-based management. For details on LFA, refer to **Annex 5.**

6 **Development of an actionplan:** It is equally important for the planning team to develop an actionplan, based on the strategic plan for the first 1-2 years. An actionplan will enable the planning team to breakdown the broad activities identified in the strategic plan to activities and sub-activities, (if necessary, tasks and sub-tasks) while indicating the timelines to be initiated and completed, responsibilities for each activity and sub-activity, and the detailed budget required for the implementation of each activity. This will in turn enable the team to monitor the progress of implementation of the HWF strategic plan.

7 **Estimated budget:** While developing actionplans for the first 1-2 years of operation will enable the planning team to arrive at a more realistic budget (see section on Development of an actionplan), the activities to be implemented later need to be budgeted too, keeping in line with the country’s budgeting guidelines.

Inclusion of the estimated budget for strategic areas and related activities is crucial for resource mobilization. Components already funded by the national budget, WHO or other funding sources could be clearly mentioned in the plan so that prospective developmental partners can review the HWF strategic plan...
and can support the funding gaps related to specific areas of work. This will finally lead to the whole HWF plan being funded by different partners.

8 **Timeframe for actionplan:** Usually, strategic plans range from 5 to 10 years as HWF development usually takes 5 to 7 years. The exact years need to be mentioned in the plan. It is important to gauge the timeframe as implementation can only begin after official approval from authorities.

<table>
<thead>
<tr>
<th>No.</th>
<th>Objectives</th>
<th>Strategic Activities</th>
<th>Target/Indicator</th>
<th>Responsible person/dept</th>
<th>Timeframe</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SO7</td>
<td>Increase AMW, MW and DMS training opportunities through scholarship programme.</td>
<td>No. of scholarships granted.</td>
<td>Dept. of Medical Sciences.</td>
<td>3/09 – 6/09</td>
<td>8000 rupees per month per head.</td>
</tr>
</tbody>
</table>
|     |            | Strengthen capacity at district MW training schools for AMW, MW and DMS training courses. | - No. of faculty deployed.  
- Curriculum developed for AMW. | DMS (Admin & Finance).  
DMS (Training). | 2/09 – 7/09  
11/08 – 1/09 | 15000 rupees in salary per head, per month. |
|     |            | Logistic support for AMW, MW and DMS training schools for the increase intake. | No. of hostel beds, desks, chairs, messing and amenities. | District MW Training School. | | 50000 rupees per annum, per head. |

MW= Midwives, DMS= Department of Medical Sciences, AMW= Auxiliary midwife

9 **Conclusion:** Here a brief summary of what the HWF strategic plan will accomplish within the allotted timeframe is discussed. It also shows how the plan will improve the HWF situation in the country.

5.3 **Documenting the plan:** The laborious planning process deserves its merit in the form of comprehensive documentation. The strategic plan needs to be documented, using an appropriate format.

**Resource mobilization:** Realistic budget estimation and resource mobilization are of prime importance in implementation of HWF strategic planning. Doable priority action should first be carried out with existing facilities, available resources and personnel. Implement incremental changes that will motivate donor and stakeholder
participation, and pave the way for resource mobilization. Some processes are ongoing and are already being funded by government or developmental partners. This needs to be mentioned so that the funding gap can be identified for further resource mobilization.

**Approval:** In some countries of the Region such plans are formally approved by the Cabinet of Ministers or by the Parliament that are their supreme bodies. The commitment of high-level policy- and decision-makers is critical for the successful development and implementation of an HWF strategic plan. While often such commitment works as stimulus for initiation of the planning process, it needs to be maintained by constantly keeping the high-level decision-makers and policy-makers informed of the progress of the planning process.

**Advocacy:** Once finalized, it is highly recommended that the plan is advocated at all levels of government and nongovernment sectors, and among the myriad stakeholders who will be involved in implementing the different components of the plan.

General note: Having drawn the CSP for HWF is just the beginning of the long journey to implement the plan. Many plans are developed but not approved, nor implemented. Thus, it is important that right from the start, people with authority feel committed to implement the strategic plan.
Developing the monitoring and evaluation plan

- During the planning stage there is no certainty about activities that will or will not work and on what might be needed in the future. Strategic planning by nature is iterative and has to be reviewed and revised while implementing the plan. The monitoring and evaluation processes, baseline indicators and targets need to be in place from the beginning to measure success/failure, or degrees of success/failure.

- **Monitoring process**: The monitoring team can include a third party from an external monitoring team or an internal monitoring team, and consists of stakeholder representatives, professional organizations and client representatives.

- The **frequency** of monitoring can either be quarterly, annually or biannually and it should be strategically efficient and cost-effective.

- The **cost** incurred on monitoring and evaluation has also to be calculated and set aside in the beginning itself in the plan.

- The **tools** for monitoring and evaluation need to be developed according to the indicators and targets stipulated in the plan. The details on monitoring and evaluation tools can be accessed through references 4 and 12. Quantitative and qualitative assessments of the programme need to be conducted in some areas.

- **Formative assessment** measures the outcome and provides feedback to improve the process. This type of assessment adds value to the programme as it ensures relevance during its implementation period.
- **Summative assessment** is conducted at the end of the project or the phase; it decides whether the overall objectives have been achieved or not.

- The **annual Strategic plan review** is usually conducted for a long-term programme. It is best to conduct such an annual review and give feedback on its findings in order to improve the programme. The report of the review has to be well documented and presented to high-level authorities so that recommendations and feedback could be noted and action on them ensured. The efforts made by the HWF country team have to be officially acknowledged at this point of time to motivate further commitment.

- **Evaluation**: This is a process by which the team conducts an assessment at the end of the programme to determine the level of achievement of the objectives of the programme.

- **Evaluation team**: Usually the final evaluation team consists of internal and external participants. The terms of reference of the team are well defined. During the planning stage it is important to define the means by which the rate of implementation of the HWF plan will be measured. Output indicators, targets and the process of evaluation will need to be established and documented.

- **Feedback and course correction**: The monitoring and evaluation process is completed by providing feedback on the findings to the implementers so that the process could be redirected and course correction could be made for better results. The feedback should be provided through targeted surveys and course correction should be made. This step will help in aligning HWF development with the country health needs.
**Conclusion**

The 11 Member States of the WHO SEA Region are home to approximately 25% of the world’s population, with almost 30% of the global disease burden\(^{(13)}\). Each country is unique with its specific HWF problems. There is no universal best strategy for improving HWF and there is no simple way of gaining sufficient political support for a proposed strategy. If there should be better information, and understanding of the HWF situation, those data or information should serve to inform the policymakers for HWF reforms.

The whole process of strategic planning and implementation should be based on an evidence of HWF situational analysis - it has to be flexible and iterative. Sometimes, full resources may not be mobilized but it is always important to bear in mind that we should start from existing capacity and build on actions that are possible making incremental changes to improve the HWF situation. When resources become available, parts of the bigger plan could be implemented.

It is certain that reliable HWF information and inputs (contributing towards evidence-based HWF strategy formulation) when implemented with concerted efforts of all stakeholders will bring us closer to achieving the MDGs.
References


Definitions and categories of health workforce

**Health workers:** Health workers are all people primarily engaged in actions with the primary intent of enhancing health (*World Health Report 2006*). The health workforce comprises all people engaged in enhancing health in a country, including community health volunteers and traditional medicine practitioners.

**Adequate health workforce (HWF):** An adequate health workforce is defined as at least 2.3 well-trained doctors, nurses and midwives available per 1000 people and balanced in such a way that 80% of the population or more is likely to be reached with skilled birth attendance and childhood immunization.

   Below that threshold, countries are unable to provide basic life-saving services in a consistent manner (*Global Atlas for Health Workforce-2006, 14*).

**Health systems:** These comprise all activities with the primary goal of improving health.

**Human resources for health (HRH):** “the stock of all individuals engaged in the promotion, protection or improvement of populations’ health”. (*World Health Report 2000- Health systems’ improving performance, Geneva, WHO*). These are paid personnel and can be divided into two main groups, two thirds are “health service providers” and one third are “health management and support workers”.

**Categories of Health Workforce**


**Disaggregated dataset:** Classified into 18 categories, absolute numbers.

1. **Physicians:** include generalists and specialists.
2. **Nursing personnel:** include professional nurses, auxiliary nurses, enrolled nurses, dental nurses, primary care nurses and in some countries nurse-midwives.
3. **Midwifery personnel:** professional midwives, auxiliary midwives, enrolled midwives.
4. **Dentists**
5. **Dental technicians and assistants:** include dental assistants and dental technicians.
6. **Pharmacists**
(7) Pharmaceutical technicians and assistants

(8) Laboratory scientists

(9) Laboratory technicians/assistants: laboratory assistants, laboratory technicians and related occupations.

(10) Radiographers: include radiographers and related occupations.

(11) Environment and public health workers: include environment and public health officers, sanitarians, hygienists, environment and public health technicians, district health officers, malaria technicians, meat inspectors, public health supervisors and similar professions.

(12) Community health workers: include traditional medicine practitioners, faith-healers, assistant/community health education workers, community health officers, family health workers, lady health visitors, health extension package workers, community midwives and traditional birth attendants.

(13) Traditional medicine practitioners: include traditional and complimentary medicine practitioners and associates.

(14) Traditional birth attendants

(15) Medical assistants: medical assistants, clinical officers and related occupations.

(16) Personal care workers: include institution-based personal care workers, home-based personal care workers, health care assistants and other categories of care attendants in health services.

(17) Other health workers: include dieticians, nutritionists, occupational therapists, operators of medical and dental equipments, optometrists, opticians, physiotherapists, podiatrists, prosthetic/orthotic engineers, psychologists, respiratory therapists, respiratory therapy technicians, speech pathologists, trainees and interns.

(18) Health management and support workers: include other categories of health systems personnel, such as managers of health and personal care services, health economists, health statisticians, teaching professionals, health policy lawyers, medical records and health information technicians, ambulance staff, cleaning staff and building and engineering staff and general support staff.

Two main categories: Health service providers and health management and support workers.

Sector for HWF: The public sector comprises HWF working in ministries of health, public services, and other related ministries.

Private sector: The HWF working in private hospitals, clinics and private institutions.

NGO: Nongovernmental organization (local and international) working in the field of health.
Problem tree analysis: It is a diagnostic tool for identifying and prioritization of HWF problems and issues that need to be addressed by the strategic plan\(^{10}\). It is part of the participatory method intended to create ownership and commitment among the stakeholders involved. (e.g. HWF planners from MoH, beneficiaries, health workers, planners, local health committee members).

The analysis consists of the following three stages:

1. Problem analysis;
2. Analysis of objectives; and
3. Analysis of strategies.

Problem analysis: It is of major importance with regard to project planning and it strongly influences the design of possible intervention. It includes:

1. Verification of the subject of analysis: HWF problems.
2. Identification of problems related to the subject, making of a list of problems, formulated as negative conditions regarding HWF; all participants must be given a chance to express the problems that they visualize and their views must be respected.
3. Establish the cause-and-effect hierarchy between problems.

Objective analysis: The objective analysis includes the following steps:

1. Translation of the negative situations in the problem tree into a realized positive state (objectives) e.g. “no proper HRH data” will be converted into “improved HRH data”.
2. Verification of the hierarchy of objectives: It is important to involve the stakeholders in discussions and to get their feedback on the objectives that need to be accomplished. Some objectives may not be reached or may fall out of the scope of the analysis. In that case, choices will have to be made.

Analysis of strategy: It involves the following steps:

1. Identification of the different possible groups of objectives contributing to a higher level (cluster) of objectives.
Step2. Choice of strategy for intervention or choosing the scope of the project. When choosing the scope, some criteria have to be established and agreed upon.

Criteria:

- Priorities of beneficiaries
- Urgency of need
- Fit with country health needs
- Inter-linkages between clusters
- donor policy
- sustainability
- available funds
- available HR and institutional capacity

References for further reading

(1) MDF Tool: Problem Tree Analysis

(2) AAAH Workshop, Manila, 5-9 May 2008. Documents by Dr Ronquillo K.G. Director, Health, Human Resources Development Bureau, Department of Health, Philippines.
Causal-web analysis: A model approach to joint programme planning

This tool was developed by WHO/SEARO, based on the concept of health viewed as a holistic notion and in the context of the primary health care approach. In the past 30 years, the systems approach to health service delivery has gradually tuned WHO to joint planning practices at the country office, regional office and headquarters levels.

The causal–web analysis (CWA) helps to see the broad picture of causal elements and their linkages processes. It brings key players to the planning table to work together as a team. It focuses on the need to develop comprehensive programmes rather than fragmented programmes along the “vertical lines of technical disciplines”. Health workforce planning is multidisciplinary and CWA helps to develop an encompassing programme planning.

The environment for joint planning requires enabling conditions conducive for brain-storming and respecting participants’ ideas, time, resources and participatory decision-making practices.

The process is described as an orderly process of:

(1) Defining the problem through a causal web of causes that gives a broad picture.
(2) Joint planning involves multistakeholders who are directly or indirectly connected to the problem.
(3) Identifying unmet needs and demands, risk and opportunities.
(4) Causal-web analysis: prioritizing the problems.
(6) Charting out interventions/actions.
(7) Charting a plan-of-action matrix.
(8) Operational planning.
(9) Budgeting.

Reference

The book is available at WHO libraries.
Focus group discussions

A focus group discussion (FGD) is a group discussion of approximately 6 - 12 persons guided by a facilitator, during which group members talk freely and spontaneously about a certain topic.

An FGD is a qualitative method. Its purpose is to obtain in-depth information on concepts, perceptions and ideas of a group. It aims to be more than a question-answer interaction. The idea is that group members discuss the topic among themselves, with guidance from the facilitator.

The FGD techniques can, for example, be used to:

1. **Focus research** and develop relevant research hypotheses by exploring in greater depth the problem to be investigated and its possible causes;
2. **Formulate appropriate questions** for more structured, large-scale surveys;
3. **Help understand** and solve **unexpected problems in interventions**;
4. **Develop appropriate messages for health education programmes** and later evaluate the messages for clarity; and
5. **Explore controversial topics**.

Strengths and limitations

Implementation of FGDs is an iterative process; each focus group discussion builds on the previous one, with a slightly elaborated or better-focused set of themes for discussion. Provided the groups have been well chosen, in terms of composition and number (see below), FGDs can be a powerful research tool that provides valuable spontaneous information in a short period of time and at relatively low cost.

An FGD should not be used for quantitative purposes, such as testing of hypotheses or generalization of findings for larger areas, which would require more elaborate surveys.

However, FGDs can profitably complement such surveys or other, qualitative techniques. Depending on the topic, it may be risky to use FGDs as a single tool. In group discussions, people tend to centre their opinions on the most common ones, on ‘social norms’. In reality, opinions and behaviour may be more diverse. Therefore it is advisable to combine FGDs with at least some key informant and
in-depth interviews. Explicitly soliciting other views during FGDs should be routine as well.

In case of very sensitive topics, such as sexual behaviour or coping with HIV/AIDS, FGDs may also have their limitations, as group members may hesitate to air their feelings and experiences freely. One possible remedy is the selection of participants who do not know each other (e.g. selection of children from different schools for FGDs about adolescent sexual behaviour), while ensuring absolute confidentiality.

It may also help to alternate the FGD with other methods, for example, to precede it by a self-developed role play on sexual behaviour, or to administer a written questionnaire immediately after the FGD with open questions on sexual behaviour in which the participants can anonymously state all their questions and problems.

For details visit web site http://www.idrc.ca/en/ev-56615-201-DO_TOPIC.html
Nominal Group Technique


The nominal group technique (NGT) is a decision making method for use among groups of many sizes, who want to make their decision quickly, as by a vote, but want everyone’s opinions taken into account (as opposed to traditional voting, where only the largest group is considered) [1]. The method of tallying is the difference. First, every member of the group gives his/her view of the solution, with a short explanation. Then, duplicate solutions are eliminated from the list of all solutions, and the members proceed to rank the solutions, 1st, 2nd, 3rd, 4th, and so on. The numbers each solution receives are totalled, and the solution with the lowest (i.e. most favoured) total ranking is selected as the final decision. There are variations on how this technique is used. For example, it can identify strengths versus areas in need of development, rather than be used as a decision-making voting alternative. Also, options do not always have to be ranked, but may be evaluated more subjectively.

This technique was originally developed by Delbecq and VandeVen [2][3], and has been applied to adult education programme planning by Vedros [4].

Effects of NGT

The NGT has been shown to enhance one or more dimensions of effectiveness of decision-making groups. Requiring individuals to write down their ideas silently and independently prior to a group discussion increased the number of solutions generated by groups [2][3]. Round-robin polling also resulted in a larger number of inputs and fostered more equal participation [4]. The increased number of heterogeneous inputs led to high-quality decisions [5].

As compared to interacting groups, the NGT groups provide more unique ideas, more balanced participation between group members, increased feelings of accomplishment, and greater satisfaction with idea quality and group efficiency [6].

Uses of NGT

- When some group members are much more vocal than others.
- When some group members think better in silence.
- When there is concern about some members not participating.
When the group does not easily generate quantities of ideas.
- When all or some group members are new to the team.
- When the issue is controversial or there is heated conflict.

**Standard procedure**

Routinely, the NGT involves the following five stages:

1. **Introduction and explanation:** The facilitator welcomes the participants and explain to them the purpose and procedure of the meeting.

2. **Silent generation of ideas:** The facilitator provides each participant with a sheet of paper with the question to be addressed and asks them to write down all ideas that come to mind when considering the question. During this period, the facilitator asks participants not to consult or discuss their ideas with others. This stage lasts approximately 10 minutes.

3. **Sharing ideas:** The facilitator invites participants to share the ideas they have generated. He records each idea on a flipchart using the words spoken by the participant. The roundrobin process continues until all ideas have been presented. There is no debate about items at this stage and participants are encouraged to write down any new ideas that may arise from what others share. This process ensures all participants get an opportunity to make an equal contribution and provides a written record of all ideas generated by the group. This stage may take 15-30 minutes.

4. **Group discussion:** Participants are invited to seek verbal explanation or further details about any of the ideas that their colleagues have produced that may not be clear to them. The facilitator’s task is to ensure that each person is allowed to contribute and that discussion of all ideas is thorough without spending too long on a single idea. It is important to ensure that the process is as neutral as possible, avoiding judgement and criticism. The group may suggest new items for discussion and combine items into categories, but no ideas should be eliminated. This stage lasts 30-45 minutes.

5. **Voting and ranking:** This involves prioritizing the recorded ideas in relation to the original question. Following the voting and ranking process, immediate results in response to the question are available to participants. This allows the meeting to conclude upon reaching a specific outcome.

The number of nominal group meetings to be held will depend on the nature of the question and accessibility to key stakeholders best suited to help address the problem.

**Advantages and disadvantages of NGT**

As with any technique, there are advantages and disadvantages. NGT is no exception. One major advantage of NGT is that it avoids two problems caused by group
interaction. First, some members are reluctant to suggest ideas because they are concerned about being criticized. Second, some members are reluctant to create conflict in groups. (Many people want to maintain a pleasant climate.) NGT overcomes these problems as it has the clear advantage of minimizing differences and ensuring relatively equal participation. It may also be, in many cases, a time-saving technique. Other advantages include producing a large number of ideas and providing a sense of closure that is often not found in less-structured group methods.

The major disadvantage of NGT is that the method lacks flexibility by only being able to deal with one problem at a time. Also, there must be a certain amount of conformity on the part of members involved in NGT. Everyone must feel comfortable with the structure involved. Another disadvantage is the amount of time needed to prepare for the activity. There is no spontaneity involved with this method. Facilities must be arranged and carefully planned. Opinions may not converge in the voting process, cross-fertilization of ideas may be constrained, and the process may appear to be too mechanical.

**Adaptation for ill-structured problems**

Modification of NGT, undertaken by Bartunek and Murnighan [7], helps to deal with ill-structured problems. Normal ideas are generated and listed, followed by facilitator’s questioning if the ideas are relevant to the same problem. If not, the problem is said to be ill-structured and the ideas generated are clustered into coherent groups. These clusters of ill-structured ideas are then treated as problems in their own right and the NGT procedure is applied to them. Regular breaks are taken by participants to ensure that the group members feel that they are still working on the original problem.

**References for further reading**


Delphi

The Delphi technique is a widely used and accepted method for gathering data from respondents within their domain of expertise. The technique is designed as a group communication process that aims to achieve a convergence of opinions on a specific real-world issue. The Delphi process has been used in various fields of study such as programme planning, needs assessment, policy determination, and resource utilization to develop a full range of alternatives, explore or expose underlying assumptions, as well as correlate judgements on a topic spanning a wide range of disciplines. The technique is well suited as a method for consensus-building by using a series of questionnaires delivered using multiple iterations to collect data from a panel of selected subjects. Subject selection, timeframes for conducting and completing a study, the possibility of low response rates, and unintentionally guiding feedback from the respondent group are areas that should be considered when designing and implementing a Delphi study.

References

(1) Hsu, C.C., The Ohio State University & Sandford, B.A. Oklahoma State University. Practical Assessment, Research and Evaluation. The Delphi Technique: Making Sense Of Consensus, Volume 12, Number 10, August 2007, electronic journal, ISSN 1531-7714


(4) PILL, J. (1971). The Delphi method: Substance, context, a critique and an annotated bibliography. Socio-Economic Planning Sciences,


(6) http://is.njit.edu/pubs/delphibook/ch3b1.html
SoftPODD - software tool for online policy diagnosis and dialogue

This web-based computer software was developed jointly by WHO, Global Health Workforce Alliance and Clemson University in the USA. It was designed for use by policy-makers, HRH practitioners, public health planners and researchers who are interested in addressing the HWF issues within their countries’ context.

The software can be used for national HWF policy development and requires input of information regarding existing quantity and quality of different categories of HWF, and gives the user recommendations with regard to HWF policy crafting. The user can put in comments and have an ongoing policy dialogue. It is a useful tool, provided the information input is correct and reflects the actual, existing HWF situation.

The tool has options for five main areas for HWF policy planning. They are:

1. User’s background;
2. Specific context;
3. Entry into health professional workforce;
4. Existing health workforce; and
5. Exit from health workforce.

The tool can be used repeatedly as respondents can compare answers with one another, reflect on their previous answers, and use the tool to help organize and think about the complex issues that surround HWF planning.

There are options to submit comments using an advice button where one can get access to reference with links to HWF studies and papers.

There are options to submit comments using an advice button where one can get access to references with links to HWF studies and papers.

The web address and contact address is given below. Those who wish to access the programme, please email the contacts below to obtain a user ID.
Contact references

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Website URL http://camss.clemson.edu/softpodd

HRH Focal Point
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WHO/SEARO, New Delhi
hsd@searo.who.int
The WPRO Workforce Projection Tool (WWPT)

This tool is an application designed for projection of HWF needs of a country or area. It incorporates parameters such as attrition rate, population growth, projection patterns, salaries and training costs when creating new projection models. It was developed by the HSD unit, Health Sector Development division, and Information Technology group of the WHO Western Pacific Regional Office. The following are the required data to use the WWPT:

Projection wizard data requirement

The Projection Wizard needs several data requirements to create and/or modify a projection model. The wizard has three process steps.

Projection Wizard – Step 1

In Step 1, the parameters to be used in the projection are defined:

1. Country / area
   - Specifies which country or area the projection model is being applied to.
   - This value is read-only and can be modified through the Set-up module.

2. Profession
   - Defines the profession for which the projection model will be made.
   - If the profession that is needed is not in the list, a new profession may be created through the Profession module.

3. Inclusive years (maximum 20 years)
   - Defines the scope (in years) of the projection model. The difference between the beginning year and ending year should not exceed 20 years.
   - When creating a new projection model, the starting year is set to the current year by default. Changing the starting year will adjust the Current
Population, Annual Population Growth Rate and Equity Factor if the data for the starting year are defined in the Country module.

4. Title
- Name of the projection model being created. Entry here will also be reflected as title for related reports to be generated for this projection.

5. Current population
- Relates to the current population of the country or areas which the projection model is being applied to. This is usually based on the most recent census or official report of the country/area.
- This value changes whenever the starting year is modified. The default population for any year may be defined through the Country module.

6. Annual population growth rate
- Rate at which the country/area’s population grows on an annual basis. This is usually based on the most recent census or official report of the country/area.
- The value changes whenever the starting year is modified. The default growth rate for any year may be defined through the Country module.

7. Equity factor
- The multiplier assigned for each country/area that is based on the proxy value human development index (HDI), ethnicity and race, and economic statistics as expressed in real % growth in GDP of countries and areas. Weights have been given to these factors as determinants to the production and deployment of human resources for health. More workers are envisioned to be produced and deployed to countries/areas where their equity factors are high.
- This value changes whenever the starting year is modified. The default equity factor for any year may be defined through the Country module.

8. Ratio to other professions
- Ratio is based on the current number of particular profession being projected against another profession. It provides a preview of a country/area’s skill-mix.
- Used only if it is necessary to do a comparative analysis of skill-mix from the selected country/area.
**Projection Wizard – Step 2**

**Step 2** requires information regarding category-specific variables. When creating a new projection model, the initial data are automatically loaded. These initial data can be modified through the **Category** module.

1. **Category**
   - Lists all categories available for a particular profession. Check categories to include them in the projection. Delete them if you wish to remove them.
   - You cannot remove categories that are selected in the **Ratio to Other Profession** field from **Projection Wizard – Step 1**.

2. **Number at beginning of year**
   - Estimated population of the specified profession for the current year.
   - The value should not be below zero (0).

3. **Attrition rate**
   - The rate of exit (regardless of form) from a profession, computed annually for the particular profession.
   - The value should be in percentage form. (e.g. 1.0 here means 1.0% attrition rate).

4. **Profession/category to population ratio**
   - Ratio of a particular profession/category to the country/area population for the current year.
   - The total population ratio for all categories should be less than the **Profession to Population Ratio** field from the **Projection Wizard – Step 1** form.

5. **Current salary cost**
   - Average annual salary of a profession at entry-level post.
   - The value should not be below zero (0).

6. **Current cost to train**
   - Average cost to produce a graduate of a given profession.
   - The value should not be below zero (0).
**Projection Wizard – Step 3**

**Step 3** requires the user to make assumptions that will calculate the input data needed to progressively make an estimate based on historical information.

When creating a new projection model, the initial data are automatically loaded. The initial data can be modified through the **Category** module.

1. **Production pattern**
   - Users will have to get the average production of graduates of the health profession being projected from the previous 3-5 years. This will be used as the multiplier to estimate the production of graduates based on the desired number of years.
   - The value should not be below zero (0).

2. **Maximum growth allowed in budget**
   - User will have to compute for the number of new entrants in the sector of a particular profession above the budget received for the current year. Then, make an estimate of new entrants anticipated to enter the sector based on the annual budget.
   - The value should not be below zero (0).


The above website could be accessed for the latest updated version. Accessed on 12.08.08.
Logical framework approach

The logical framework approach (LFA) was developed originally by Practical Concepts Inc. in 1969. It was intended to serve as a project planning tool for the US Agency for International Development (USAID). It has since been widely adopted and adapted by the international donor community and is used for project designing and planning. Since 1998, WHO has undertaken strategic reforms aimed at improving accountability and transparency and has adapted LFA for “Results-based programme management” in WHO.

The LFA is a problem-and-objective-oriented approach that enables the planning team to document the key elements of a plan in a matrix showing the linkages very clearly while providing an opportunity to spell out the broad activities and outputs under each specific objective, with a logical sequence. Further this template will enable the planning team to integrate the monitoring and evaluation plan for its implementation into the same framework by identifying the verifiable indicators and means of verification. Further it will enable the team to explicitly state the assumptions and preconditions that the team would have already examined during situational analysis.

The LFA is organized in a project matrix, but before the project matrix can be completed all project elements and indicators have to be defined. The following points need to be considered first:

- Identification of problem area: what are the problems areas.
- Participation analysis: who are the key stakeholders involved, external, internal, clients, primary, secondary stakeholders, map the relationship between different stakeholders.
- Problem analysis: can use the problem tree to identify the core problem, create the foundation for objective tree.
- Object tree analysis: is a visual way of identifying what actions are needed to tackle the causes of the problems. Develop SMART objectives.
- Intervention analysis: based on the objectives, interventions can be identified. Analysis of interventions in terms of financial resources, HR, institutional capacity, resistance form stake holders. And then finally agree on the strategy.
- Project matrix: as shown in the diagramme.
- Assumptions: preconditions need to be assessed one by one asking questions: is the assumption important to the project? Will the assumption be fulfilled? If not, it has to be deleted.
- Indicators: it is the qualitative or quantitative evidence that is used to assess progress towards the objective. It provides the basis for monitoring and evaluating outcomes. An objective may have more than one indicator.

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Elements (narrative summary)</th>
<th>Objectively Verifiable Indicators (OVI)</th>
<th>Means of Verification (MOV)</th>
<th>Assumptions/ Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Development Objectives</td>
<td>Measurable indicators that are used to indicate whether the development objectives will be reached.</td>
<td>Ways of verification.</td>
<td>Conditions, events decisions that are outside the control of the project but are necessary for reaching the development objectives.</td>
</tr>
<tr>
<td></td>
<td>Immediate Objectives</td>
<td>Measurable indicators that are used to indicate whether the immediate objectives have been or will be reached.</td>
<td>Conditions, events decisions that are outside the control of the project but are necessary for reaching the immediate objectives.</td>
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<tr>
<td></td>
<td>Outputs</td>
<td>Output indicators</td>
<td></td>
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<td></td>
<td>Activities</td>
<td>Input indicators</td>
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</tr>
</tbody>
</table>

**Strengths of LFA**
- Problem-and-objective-oriented approach, consistency in programme, project and planning.
- Highlights linkages between project elements, external factors and stakeholders.
- Provides basis for systematic monitoring and evaluation.
- Allows participatory analysis (groups participating in the project).

**Limitations**
- Time-consuming and tedious.
- Rigid and not always best when there are frequent changes.
- Exclusively objective-based - can lead to strong focus on results rather than on process and sustainability.

**References for LFA**

Reference of websites on HRH

Websites:
AAAH      www.aaahrh.org/aaah.php
AFRO      www.afro.who.int/hrd
EURO      www.human-resource-health.com
GHWA      www.ghwa.org

Key resources:
The World Health Report 2006
WHO database on health workforce statistics
Global Atlas of the health workforce

Regional Observatories on Human Resources in Health Systems
(1) Africa Health Workforce Observatory
    www.afro.who.int/hrh-observatory
(2) Eastern Mediterranean Region
    www.emro.who.int/hrh-obs/
(3) European Observatory on Health Systems & Policies
    www.euro.who.int/observatory
(4) Latin American Region and the Caribbean
    www.observatoriorh.org

Other Resources:
(1) Spotlight on Statistics
    It’s a series of fact files on health workforces for health
(2) WHO Statistical Information System (WHOSIS)
Health workforce observatories

The Africa Health Workforce Observatory promotes, develops and sustains the knowledge base for human resources for health in the African region to provide evidence for informed health policy decisions in order to strengthen health systems to provide more effective and efficient health service delivery.

The Observatory is a cooperative initiative supported by the WHO Regional Office for Africa serving country networks and regional forums as a platform for sharing, synthesis and dissemination of health workforce information.

The Observatory monitors and shares both positive and negative practices and experiences. This information and these data are disseminated to inform decisions and advocacy to maintain the HRH agenda at national, sub-regional, regional and global forums.

Other related references

- Website http://www.afro.who.int/hrh-observatory/index.html
It is an established fact that the 11 Member States of the South-East Asia Region are home to approximately 25% of the world’s population and bear almost 30% of the global disease burden.

In this context, the World Health Report 2006 highlighted the main role to be played by the health workforce (HWF). Countries need to overcome the shortage of HWF that has been identified as the most significant constraint for efforts to reach the health-related MDGs. Every country is unique in its needs and capacities. As a result, the whole process of strategic planning and implementation should be based on evidence generated through HWF situation analysis that is flexible and interactive.

These guidelines have been developed based on the WHO/SEARO "Regional Strategic Plan for HWF Development" and are designed to serve as a tool in developing country-specific HWF strategic planning.