CHAPTER - II

LINKAGES BETWEEN MANPOWER DEVELOPMENT PROCESS AND HEALTH-CARE SERVICE SYSTEM: A CONCEPTUAL FRAME

The process of health manpower planning, health planning, and development planning may be conceived and looked upon as an integrated whole in the framework of a "Systems Approach". Health manpower planning is a sub-system of health planning which is itself a sub-system of socio-economic planning of overall development planning. The significance of an integrated approach to the delivery of health care services and manpower development is now increasingly realised. The purpose of integrated approach (HSMD) is to improve health services through better co-ordination of manpower planning and management.

The HSMD concept puts the main emphasis on the integration of the different functional elements of health services and health manpower system into a unified, comprehensive and acceptable system. There are numerous activities operating under each of these areas influenced by various inter-acting factors. An in-depth knowledge and understanding of HSMD mechanism is necessary for optimization of health services system. For the purpose, it seems desirable to have a "conceptual frame" indicating the relationship between various components of health services system and the manpower planning process.
In this chapter, we start with a discussion on the mechanism of manpower planning process and then proceed to present a brief description on the structure and functioning of the various components of health service system. The inter-linkages affecting the change in the process among the functioning of the various components of health services system and its manpower implications are thereafter highlighted.

I. MANPOWER PLANNING PROCESS

Manpower is one of the most vital resources required for economic and social development. Other resources viz., material, equipment, power and money, can be effectively used only if there is manpower capable of processing them into goods and services. How well it is developed is the essence of manpower planning.

**Concept of 'Human Resource'

The terms 'manpower resource' and 'human resource' are used here synonymously. It includes both quantitative and qualitative aspects. Human resource development is the process of increasing the knowledge, the skills and capacities of all people in a society. The development of human resource implies the development of both the physical and mental aspects of productive capacity. The physical aspects of productive capacity can be developed by means of health
services and nutrition etc. and the mental aspect by education and training.

Attitudes, values and beliefs are inseparable components of human resource which can't be subject to cardinal measurement. These take various forms and can only be perceived. In economic terms, human resource development could be described as the accumulation of human capital and its effective investment in the development of the economy. In political terms, human resource development prepares people for adult participation in the political process. From social-cultural point of view, development of human resources helps people to lead fuller and richer lives. The overall purpose, in fact, is to increase the welfare of the population. The increase in welfare means increase in income, improvement in skill/education level i.e. quality of human beings as well as improvement in social, cultural and economic environments in which human beings are to live and operate.

Defining Manpower Planning

Planning is essential for development process. It is the administrative instrument that provides a rational basis for decision making. "Manpower planning is a process of developing and determining objectives, policies and pro-

grammes that will develop, utilize and distribute manpower so as to achieve economic and other goals. It also includes developing necessary organization and institutions required to execute manpower programmes.

The overall purpose of manpower planning can be described as: (1) achievement of quantitative and qualitative balance between manpower demand and supply; (2) proper utilization of manpower to achieve higher productivity; (3) development, training and retraining to cope with advancing technology; (4) motivation to achieve job satisfaction.

It must be recognized that manpower planning takes place in the context of development planning. It can't be done independently. It is an integral part of overall development plan, the purpose of which is to achieve certain ultimate goals which the society desires. The ultimate goals are, for practical purpose, translated into "targets" expressing the weights which the society attaches to each of its ingredients. Targets may involve economic, social, cultural and other considerations including manpower. Manpower programmes, policies are, therefore, to be chalked out in the framework of overall development plan.


Manpower Planning Process

The processes and methods by which manpower is developed, utilized and distributed are numerous and complex and encompass a wide range of activities. A framework relating these numerous manpower activities to one another so as to bring out the order of significance and interconnection among them, can contribute to a better understanding of the nature of manpower planning process. A frame of reference places the numerous manpower activities in perspective. A comprehensive listing of manpower activities in some more or less logical relationship to each other will assist in thinking through the solution to the manpower problem. It would help in prioritisation of the various activities and problems.

These various manpower activities can be grouped under four heads which are, in fact, the four sub-processes of manpower planning process. These are:

(1) Manpower generation process;

(2) Manpower development process;

(3) Manpower utilization process; and

(4) Manpower distribution process.

Manpower generation process concerns with population and demographic aspects starting from fertility and mortality which affect the growth and size of labour force and its
Manpower development process concerns with planning of education and skill development which affect the quality of manpower resources, its participation in the labour force.

Manpower utilization process concerns with employment planning covering employment generation which entails not only creating adequate employment opportunities but also ensuring that manpower is employed efficiently and productively through competitive functioning of labour market. For optimal utilization of labour force, an analysis of labour market assumes critical importance. Labour market conditions and economic structure affect employment levels and patterns.

Manpower distribution process concerns with the problem relating to sectoral and spatial imbalances in manpower distribution identifying the underlying causes of such maldistribution.

The numerous manpower activities falling under each of these areas generation, development, utilization and distribution are so intimately connected with each other that the study of one in isolation from others may sometime mislead the planning directions. The different aspects of the problem need to be studied in an integrated way. It is essential to identify the factors causing variations in these areas analysing the cause and effect relationship. The main task is to establish a mechanism for regulating the functioning of these numerous activities in a planned manner.
so as to provide direction towards achievement of the desired objectives.

Manpower planning process thus comprises all interacting policies, structures, mechanism relating to generation, development, utilization and distribution of manpower resources.

**Comprehensive and Partial Manpower Planning**

Manpower planning may be comprehensive as well as partial. If manpower considerations are accepted as one of the criteria that ought to influence long term economic and social planning, it becomes necessary to have comprehensive manpower planning. Comprehensive manpower planning implies projecting future manpower patterns. What manpower pattern do we have today? How should it be developed and what shape should it take in the long run? Manpower pattern is reflected by the changing population, employment and educational structure. The question therefore, is what should be the future distribution (industrially, occupationally and educationally) of the future manpower resource? This means putting into a consistent framework the manpower development targets in order to have a desired manpower pattern in the target year taking into consideration the social, economic, educational and financial implications.

In a completely planned economy, comprehensive manpower planning is necessary whereas in other economies it is desirable but not necessary. The economic, educational and manpower perspective plans are inter-dependent and are reconciled and integrated in an overall development perspective plan which takes into consideration the pressing weights of each plan. Unless there are comprehensive manpower projections, manpower consideration can't influence the overall development perspective plan to the extent it ought to. On the other hand, the partial projections are simply the link between the economic planning and educational planning; the objective being to make adequate provision of educational and training facilities in order to safeguard economic and social planning targets.

Partial manpower planning determines, in broad terms, the adjustment required in the educational process for producing the right number of adequately trained personnel at the right time.

The difference between the objective of comprehensive and partial planning is that in the former case, development policies are influenced by manpower consideration which is taken as an independent variable whereas in the latter case, manpower is dependent variable and is determined by economic and social plans. It may however, be emphasised that for sector like health and education, the partial manpower planning is more relevant. It may also be noted that "comprehensive" manpower planning and "partial" manpower
planning as described above are generally termed as "Human resource development planning" and "Manpower planning", respectively, in some of the papers prepared by ILO-ARTEP in the context of their programmes on "Integrated approach to human resource development". However, these are not uniformly defined.

Now we turn to the question of formulation of manpower policies and plans. How these are chalked out? What steps are involved in the planning process?

**Procedural Steps in Manpower Planning Process**

The procedural steps involved in the planning process are broadly indicated below:

- Assessment of current manpower situation identifying the nature and type of imbalances that currently exist and the reasons thereof. Imbalances could be quantitative, qualitative, organizational and distributional. Based on the current situation, an analysis of likely imbalances between expected requirements and expected supply may be made;

- Data collection and analysis: preliminary analysis/examination of existing availability of data will indicate the requirement of data and the need for developing information and research system on a

continuous basis;
- Identification of major problems and their causes — prioritisation of issues and problems;
- Determining objectives, establishing priority goal and fixing targets that are realistic and feasible after reviewing the national priorities and constraints;
- Developing appropriate strategy, policy formulation and preparation of plan;
- Programming;
- Co-ordination of planned programmes;
- Determining technical and administrative action to ensure required mechanism for implementation, monitoring and evaluation; and
- Establishing feed-back mechanism for adjustments and mid-term corrections in the plan and programming — adopting the concept of 'rolling' plan.

Dynamics of Manpower Planning Process

Manpower planning process is, in fact, both dynamic and cyclical in nature. Planning does not end with the preparation of the plan. It is a continuous process. The task is not only to make plans but to ensure that they are duly implemented and that manpower system operates efficiently and effectively. As situation changes due to occurrence of new developments or the availability of new data or due to other reasons, the plan should be modified accordingly.
Manpower Management

The overall objective of manpower management is two-fold: (1) to ensure that manpower policies and plans are carried out in a planned, orderly, efficient and effective way; and (2) to ensure that adequate mechanism exists for developing, utilizing and encouraging the personnel to improve their performance by providing them with motivation, supervision and continuing education.

It is now increasingly recognized that the most clearly defined, appropriate and comprehensive manpower policies and plan will have little impact without an adequate management infrastructure to implement them. This implies that there should be a permanent organizational base (appropriate institution and administrative machinery) from which the manpower planning process is directed - planned, controlled and influenced. In this way, a number of activities and agencies get involved in the process of manpower planning. The task is to coordinate these various activities and to ensure that a well organized system exists for an effective collaboration among the various agencies. To cope with the task assigned, these various agencies need to be provided with sufficient organizational and managerial capacity.

For effective manpower management valid and reliable data base is essential. The importance of good information flow cannot be over emphasised. Further, improved solution to problems are needed in any system. The research for such
solution is the function of research development.

It may be mentioned that the discussion made above in regard to the mechanism of manpower planning process is applicable to all planning process system whether it is planning for manpower, health, education, agriculture or industry etc. The approach, method and mechanism is same for all, only functional ingredients vary.

II. HEALTH CARE SERVICE SYSTEM

There are various ways of describing a health services system. However, in a simplified model, there are five major components, each of which is directly or indirectly related to other:

- Health resources (including manpower, facilities, equipment supplies and health knowledge);
- Organized arrangement of resources;
- Delivery of health care services;
- Economic support and;
- Management;

A conceptual frame indicating the inter-relationship between these various components is presented in Diagram I.

Influences on health may arise in the environment or in people's biological make up. The activities of health service system for health promotion, prevention, health

HEALTH SYSTEM: ITS STRUCTURE & FUNCTIONAL RELATIONSHIP

Based on WHO 83520
education and treatment of diseases etc., are directed towards people, but some activities are also directed towards the environment in which people live. These activities are represented by the arrows directed away from the health service system infrastructure. The health service system is able to exercise its function through a resource allocation which sets the limits on budget. The demand for health services always exceeds the available resources. Priorities have, therefore, to be set for the goals and objectives that the health system can be expected to achieve. The results of the health activities can be measured and the information fed back to the management. Through the feedback mechanism management exercises its regulatory functions.

If the health service system is to be re-oriented to achieve a specified goal e.g., health for all, it is necessary to see that all its components work harmoniously and in an integrated manner.

The goal of HFA is to be achieved through adoption of primary health care approach. The primary health care approach has been defined in Alma Ata declaration as: "Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development."
in the spirit of self-reliance and self determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process."

The implications of this approach therefore may be broadly specified in terms of social accessibility and acceptability of the technology which is simple, scientifically sound and also affordable. The initial point of contact between individuals and health system assumes greater importance and encompasses the entire population on the basis of equity and responsible participation.

So far the health service system in India has been mainly urban based, elite oriented, top-down and based on sophisticated technology catering to a small fraction of the population and resulting in the disadvantage of the majority

of the population living in rural areas. Hence, it needs a re-orientation. This is a challenging task. How this could be affected? Even The National Health Policy has not provided any directions with regard to the changes that would be required in the existing health care delivery system and the method of operationalising them for spelling out modus operandi for the same. It is essential to have a clear understanding of the functioning of the components of health service system and their linkages with the process of health manpower development. For the purpose, it seems desirable to analyse briefly the five major components of health service system indicated in the diagram II.

**Development of Health Resources**

Development of the human and physical resources is necessary to provide health care services and perform various supporting functions in an operation of a health service system. In a simple form, the health resources may be classified into four main categories viz., (1) health manpower; (2) health facilities; (3) health equipment and supplies and (4) health knowledge.

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There are a number of health personnel including physicians, dentists, pharmacists, laboratory and X-Ray technicians, nutritionists, rehabilitation therapists, hygienists, sanitary inspectors, nurses, health administrators, auxiliary health worker etc., to perform a variety of health related functions. In the context of a given health service system all these categories of health manpower should be understood in terms of their legitimate functions/related tasks, type of training and the distribution across regions to decide upon their appropriate composition in the health team.

Health facilities for physical structure e.g. hospitals, dispensaries, ambulatory services, health centres and health posts are required in a health service system. The location, size, design and sponsorship of these facilities do determine the effectiveness of these facilities.

The variety of equipment, supplies, drugs and other materials of medical and non-medical nature are required for the treatment or prevention of diseases in a given health service system. There is a need to standardize and prioritize them in the light of their relative cost effective co-efficients vis-a-vis the broad objective of the system.

An important resource in all the national health system is the knowledge about health and disease and of various methods of disease prevention, treatment and rehabilitation. However, most of the medical and health related knowledge
originates from the careful observation and gets accumulated through exchange of experience.

Research findings should form the basis for decision making in the health manpower development process and for improving its relevance to, and effectiveness in, a health system based on primary health care approach. There is a need to give appropriate emphasis on the health system research which is defined as a systematic study of the means by which bio-medical, socio-medical, and other relevant knowledge is brought to bear on the health of communities under a given set of conditions. It is action oriented research, which, by the use of scientific methods, aims at providing information and insight to facilitate a better understanding of health problems and their control. Health system research can assist in more rational health planning and resource allocation and should result in better design of health frames, encourage greater personal, family, and community self-reliances in the solution of health problems.

Organized Arrangement of Resources

To translate the various resources into health activities and enable them to function properly requires social organizational set up of some type. This is necessary to bring health resources into effective relationship with each other, and also to bring individual patients or community

9. Ibid (at Sr.No.6) p.19.
groups into contact with the resources through health care service mechanism. The type of organization of arranging them can be from among the (i) National health authorities; (ii) Other government agencies; (iii) Non-government agencies (voluntary) and (iv) the independent private sector.

**Delivery of Health Care**

There are a variety of processes by which various health care services are provided. The pattern is according to the objective of the services delivered. This separates health activities into promotional, preventive, curative and rehabilitative. Services to be delivered comprise primary, secondary and tertiary health care.

If people are to be effectively provided with health care appropriate to their needs, continuous and balanced relationships must be maintained among these types of care, keeping in view the distribution of health resources, the control of patient flow, voluntary or obligatory cooperation of health care delivery units at various levels and reasonable channelling of financial support.

As mentioned earlier, in the Indian context, however, much greater attention has been given to the tertiary level care thereby making the pattern of health services to be mainly hospital based and cure oriented. The activities pertaining to the promotional and prevention aspects have been neglected, as most of the finances are spent on the building up of the big hospitals equipped with expensive,
sophisticated and modern technology. Numerous recommenda-
tions have been made to underline the need to make a shift
from this pattern towards promotion of various public health
activities by adequately strengthening the primary and
secondary level services.

Economic Support

Development of health resources and health care deliv-
ery mechanism need adequate economic support. The economic
support may be derived from government, employment estab-
lishments, voluntary agencies and in the form of fees etc.,
from individual holders or in terms of the various health
insurance schemes etc., from the local level organization.
Whatever be the method of funding, it needs to be ensured
that aggregate amount of funding must be adequate to make
the health service system function effectively.

Management

Management is regarded as a distinct factor in effec-
tive organization and operation of the health care delivery
system. It may be defined as the process undertaken "to
introduce or strengthen as applicable and as appropriate to
their social and economic conditions, an integrated process
for defining health policies, formulating priority pro-
grammes, to translate these policies into action, ensuring
the preferential appropriation of funds from the health
budget to those priority programmes; delivering those pro-
programmes through the general health system, monitoring, controlling and evaluating health programmes and the services and institutions that deliver them; and providing adequate information support to the process as a whole and to each of its component parts."

There is a need to have a permanent nucleus with specific tasks/functions assigned to promote, develop, monitor, coordinate and regulate the management of health service system. In view of the complexity of the management function, the health service delivery system should carry out these functions by adequately establishing/strengthening at each level (central, regional and local) the mechanism of organisational and management functions to foster continuous dialogue and to ensure effective collaboration and coordination among the various government and non-government agencies responsible for various aspects (activities) of HSMD.

The main functions and responsibilities of such an organization are (1) Planning and programming (2) Coordination (3) Catalysis of process (4) Monitoring and evaluating (5) Research and development (6) Information collection and analysis. There is a need to maintain continuity of effort in the direction of monitoring, finding bottlenecks and improving upon the mode of operation based upon the feedback received from the field operation, through adequate

10. Ibid (at Sr.No.6).

leadership, decision-making and regulatory processes.

An important step involved in management process is the identification of problems and constraints. The constraints may be in "Personnel", "Organizational" and "Environmental" areas. The environmental constraints, however, refer to the overall deficiencies in the total work environment encompassing a wide variety of factors pertaining to facilities, logistics and supervision etc. The personnel constraints refer to various problems emanating from personnel issues which are varied such as the absence of qualified personnel with requisite skill to undertake various functions that supplement the process towards the goal accomplishment. The organisational constraints refer to the problem related with the administrative and bureaucratic dimension of the health service system.

III. LINKAGES BETWEEN MANPOWER DEVELOPMENT PROCESS AND DELIVERY OF HEALTH CARE SERVICES

The linkages between the manpower development process and the delivery of the health care services, as a conceptual theoretical frame is presented in the Diagram II.

In the field of manpower, there are two main processes - manpower demand process and manpower supply process. The

DIAGRAM II

RELATIONSHIP BETWEEN HEALTH SERVICES, MANPOWER AND EDUCATION

Supply process (Education and Training) → Manpower Linkages → Demand process (package of health services)

**HEALTH MANPOWER**
- Development of manpower having requisite skills expressed in terms of education and training to perform the assigned task

**EDUCATION AND TRAINING**
- Developing E & T programmes/module for imparting various health skills for production of trained manpower - curriculum design

**HEALTH SERVICES**
- Jobs specified according to the task to be performed and thereby skill needs determined - classification of jobs by skill level

**HEALTH SYSTEM RESEARCH**

**COMMUNITY HEALTH PROBLEMS**

**CHOICE OF TECHNOLOGY**
- Determining the package of services to be provided - An analysis and description of health services/jobs/tasks

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The overall objective of manpower planning is to regulate these two processes in order to promote better balance both qualitatively and quantitatively between demand and supply in order to ensure that the current and future health manpower resources meet adequately the requirement of the health care delivery system available to the people to serve their health problem.

It would be apparent from the diagram that the system of the delivery of health care services emanates from the health problems of a given community. Situational analysis/research in technology facilitates the choice of technology which helps to determine the package of services to be provided for alleviating the health problems. The package of services enlists the type of jobs/tasks to be performed by health workers at different levels, which are then translated into the level of skill, knowledge and ability required to perform the specified jobs further expressed in terms of the levels of education, training and experience required for various types of personnel. Thus the health manpower development process is required to produce the type of manpower required to perform certain given set of functions with specified levels of education and training to deliver the package of services to the population of a given community in order to help maintain the minimum standards of a healthy living.

Thus the manpower implications of a health care delivery system are enormous. It begins with personnel to under-
take research in the areas of developing appropriate technology based on pre-existing home remedies, practices of self care, self coping processes of the people in different communities; transmission of the research into development of appropriate low cost, accessible and acceptable technology, and to ensure its out-reach to the people through their representative/health workers at the grass root levels, the provision of the health services in response of the health problems of the population at the grass root levels; training of manpower to be able to respond to problems etc.

The various aspects in all these areas are inter-linked with one another in a very complex and intricated way and hence can't be dealt in isolation. A clear understanding of functional aspects of each of these components (of HSMD) viz., community, health problems, health system research, choice of technology, packages of health services, determination of skills, development of manpower, education and training is necessary for an effective co-ordination. In the subsequent paragraphs a brief discussion on each of these related ingredients is made.

Community

One of the essential ingredients of primary health care is community involvement and that such involvement is a two way process in which the community both contributes to and benefits from the development of health service and health manpower.
Encouragement of community self-reliance and self-determination forms a major plank of PHC approach. For this reason, it is necessary to have a deeper understanding of a community in terms of its culture, social structure, economic conditions and distribution of political power. Furthermore, data on cultural perception and cultural meaning of different health problems provide a social dimension to epidemiological data on different health problems. Similarly, community acceptance is a major consideration in the choice of technology for dealing with health problems.

Further, the community itself forms a most critical source of manpower. Practitioners of various indigenous systems of medicine and other traditional healers and birth attendants who form a part of the health culture of a community, are a segment of manpower. Enhancing the capabilities of a community to cope with its own health problems by imparting short training to health workers chosen from within the community is an important ingredient of HSMD towards manpower development for health service system.

For this, it is imperative that the personnel for a given health system should be well conversed with the characteristics of the community and therefore, should possess adequate communication and sociological skills for the

efficient functioning of the health service system.

Health Problems and Formulation of Policy Objectives

The formulation of policies and their implementation through programmes depend on a process that should start with the identification of problem. The precise way that a problem is perceived and articulated has a great influence on the policy objective that will be proposed for solving it.

Satisfaction of the health needs of all sections of population is the main objective of any health plan. But the problems associated with the accomplishment of this objective are numerous and pertain to each one of the components of HSMD. Some of these problems are: inadequate coverage of population; adoption of inappropriate technology; an over-emphasis on curative services; lack of adequate logistics; manpower imbalances; lack of social orientation in the training curricula of health workers; a lack of a community oriented health system research, lack of involvement on the part of community; etc.

There is a need to identify and list out these various problems and the reasons thereof so as to be able to specify the issues involved in each one of the problems. This would provide prioritization of various problems and issues and a rational basis to formulate policy direction to regulate the

functioning of the various components towards the re-orientation of the existing health service system.

Research

Research should focus on how the various components of a health system work and on the possible ways of improving it. There is a need to establish a continuum of laboratory, clinical, epidemiological, ecological and health system research in order to develop an effective and efficient health care delivery system based on the established knowledge and culturally rooted practices. Research workers are required to open up new and critical areas of research where considerations about the community, community health problems, technology and manpower requirements are analyzed as integral components of a complex whole within given social, ecological, cultural, economic and political constraints. This brings forth the need for developing personnel — health research teams, which have acquired inter-disciplinary skills.

Technology

For formulating the strategies and programmes and designing the services, it is essential to review the existing technologies and identify those that are appropriate and to indicate and promote the type of research required to develop alternative to replace inappropriate technologies. Health personnel are required to offer technologies which
are meaningful to the people under conditions in which they live and the resources that are available.

In the context of the primary health care, there is a need to develop simple and practical problem-solving techniques which can be applied by the personnel with minimum level of educational attainment and are available at the local level in time at the hour of need. Use of Oral Rehydration Therapy prepared at home with the use of sugar, gur and salt readily available vis-a-vis the use of pre-packaged electrolyte, is an example. The related problems of adequate logistics to ensure timely availability of such packets with the mothers to start early treatment are certainly the issues which need be considered for developing any technology which should also be backed with community's acceptance.

In the Indian context, the technologies based on indigenous system of medicine, were neglected during the British regime and even after independence. There is a need to develop appropriate technology considering the social, economic, cultural background of our people.

Health Services

While the health services system of a country should be adequately integrated at primary, secondary and tertiary levels with appropriate emphasis on the curative, preventive, promotive, rehabilitative services, these should also

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15. WHO 'Uses of Health System Research' WHO SEARO, New Delhi, 1983.
be available to the entire population. There exist striking regional variation in our country. The improvement in the situation does not only call for providing access to institutions, but these have to be staffed by socially sensitive, appropriately trained health workers with provision of adequate supplies, facilities and logistics.

This requires production of professional manpower having adequate technological and managerial skills, fully supplemented with epidemiological leadership and sociological skills.

**Skill**

The demand process described above determines the package of health services which specify the jobs/tasks to be performed. These tasks/jobs are then expressed in terms of the type/level of skill to be required for performing a specific job. There are variety of jobs for which a variety of skills are needed. These may be specified as communication skill, epidemiological skill, sociological skill, educational skill, team skill, leadership skill, managerial skill and medical/technical skill etc.

**Manpower**

The manpower development process has thus to emanate from the principles and guidelines imbibed in the health care delivery system. The requirements for health manpower should be derived from the health systems targets, including
qualitative needs, levels of skills, range of tasks and composition of health teams. Two crucial and interlinked aspects are the analysis and redefinition of the functions of various types of workers and the production of adequate number of each type. This applies to personnel at all levels of the health system including peripheral health worker, those in referral and supporting institutions, planners and workers in health related sectors including the policy and decision makers.

**Education & Training**

For providing requisite skill for developing adequate manpower, appropriate education and training programmes/modules need to be developed. The development of suitable education/training programmes inter-alia include issues such as development of suitable curricula and course design. The changes necessary for the education and training of health personnel have critical implication for the training of teachers. It is essential that they perceive the importance of their role as teachers. Regarding their role and aspiration from them, the WHO Expert Committee on Health Manpower Requirements for the Achievement of HFA states: "as promoters of learning, teachers need more than a sound grasp of their own health disciplines; they need to know about the national strategy for health for all, educational principles, processes and practices, and to be able to plan, implement, and evaluate relevant educational programmes."
They need to know about the needs, demands, and aspirations of communities, and about the intersectoral activities that are most likely to contribute to development”.

**Conclusion**

The health manpower development process should function as a sub-system of the overall health system development comprising of the community, nature of community health problems and the set of technologies available to deal with the various health problems and a suitable system to deliver that technology. To meet the health manpower requirements of a given system, it is not enough to produce conventional health professionals, and some auxiliaries who help them. For each category there has to be a balance between quality and quantity. Curricula will have to be drawn up to meet the qualitative requirements of each category. Training of trainers, pedagogic approaches, institutional facilities, information systems and organization of research in health manpower form important elements of the health manpower development process and crucial components of the health service system.

The foregoing discussion points out the complex relationship which exists between the health service development process and the health manpower development process. A

number of indicators can be developed under each of the component to make the relationship more lucid and prominent for developing a sound research base. But the entire process would require a mass of data of quantifiable and non-quantifiable nature. Obviously, it will not be feasible to obtain many of them.

In the subsequent chapter, our attempt is to see what type of data are generally available, and how these can be effectively utilized in the context of the present exercise.