



Report on a Consultation on the Collection and Use of  
Health Manpower Information  
Geneva, 21 - 24 March 1988

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Report on a Consultation on the Collection and Use of

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Executive Summary

Although the collection of health manpower information is fairly well-developed in many countries, the analysis, interpretation, and presentation of data are often very weak, leading to a dichotomy between the providers and potential users of information. Information is needed to improve the planning, training and management of health manpower and its acquisition is not an end in itself. At the same time, data from primary sources and sources of information on health personnel from outside the health sector, e.g., census bureaus, statistical offices, and tax departments, are seldom used by health system managers.

There are various areas where a health manpower information system, as part of the collection of information on the health system in general, can be useful. One of the main values would be to support policy analysis. Research into health manpower policies is urgently needed, especially in view of the under or oversupply of certain categories of health manpower. This research should also lead to country-specific indicators to monitor the health manpower development process (planning, training, management of health manpower), e.g., equitable access to health care, imbalances in health manpower, etc.

WHO can support the development of health manpower information systems in Member States through, for example:

- designing a personnel record system;
- promoting the use of databases and better information display to influence high-level decision-makers;
- encouraging dialogue between information providers and users;
- facilitating exchange of information between countries;
- preparation of long-term scenarios or projections of health manpower.

At the same time, WHO, in collaboration with Member States, should develop simple methodologies to project future trends, and to make estimates in areas where information is difficult to obtain, e.g., size of the private sector in health, size of inactive labour force in health, etc. Economic analysis is another area where methodologies should be developed.

It was agreed that WHO will immediately recommence the collection of a minimum set of manpower data from Member States. Starting in 1991, this data collection should coincide with the triennial cycle of monitoring and evaluation of the implementation of HFA strategies, so as to present a minimum burden on Member States. The common framework for monitoring and evaluation should be adapted to cover also qualitative information on health manpower development.

## 1. Introduction

The most recent data collected systematically by WHO on health manpower relates to 1981/82, published in the World Health Statistics Annual 1983. The data collection was based on questionnaires sent out annually to all Member States. At that time data were collected from 157 countries on 29 categories of health professions. These were broken down into a total of 201 different health occupations, as defined by Member States. This collection was stopped when the Global Strategy for HFA was launched, partly because of doubts on the accuracy of the statistics and their relevance to the needs of Member States, and partly to lessen the burden on countries of replying to questionnaires.

The immediate consequences of the decision to suspend data collection on health resources was the inability of the Organization to respond to frequent requests for recent data, especially on health manpower. These came from both within WHO and outside from research workers, institutions and government agencies. International organizations such as the UN, World Bank, and Unicef, also rely on WHO as the primary informant on national health resources.

The lack of a central point in WHO for the collection of such information means that comparisons between countries, and the identification of world and regional trends in health manpower development, are extremely difficult to establish. In addition, the regular receipt of a WHO questionnaire on health manpower provided a stimulus to countries to collect information. Once this stimulus was removed, many discontinued the collection of data on a routine basis. At the national level this lack of information has wide implications on the whole health infrastructure. Not only do countries lack basic information on their own manpower resources as a basis for planning, but they are also unable to learn from conditions prevailing in neighbouring countries. Since the optimal use of the right kind of trained personnel is vital for the effective functioning of health systems, this constitutes a serious handicap.

Solution of the problem of health manpower imbalances, i.e. discrepancies between the numbers, types, and functions in the quality of health workers as well as inequity in distribution on the one hand, and a country's need for relevant services, and its ability to employ, support and maintain them on the other, also depends to a large extent on the availability of sufficient and relevant health manpower information.

Subsequent to the CIOMS/WHO Conference on Health Manpower out of Balance: Conflicts and Prospects (Mexico, September 1986), in May 1987 the World Health Assembly adopted resolution WHA40.14 on the promotion of balanced health manpower development. The resolution, inter alia, urges Member States:

"to develop sufficient relevant demographic information about health manpower, a set of reliable and realistic country specific criteria and indicators based on accessible data, and appropriate mechanisms to identify and monitor changes according to the actual needs of countries",

and calls on the Organization:

"to promote urgent research into the fast-growing problem of health manpower imbalances and the exchange between Member States of relevant information and indicators concerning such imbalances."

In response to this resolution, and to expressed needs, the Divisions of Health Manpower Development and Epidemiological Surveillance and Health Situation and Trend Assessment, organized a Consultation on the Collection and Use of Health Manpower Information, held in Geneva from 21 to 24 March 1988.

The objectives of the Consultation were:

Overall objective

To review the collection and use of health manpower information and examine implications for WHO and Member States.

Specific objectives:

- i) to define a minimum set of health manpower data to be collected periodically by WHO from Member States;
- ii) to define the sources, approaches and periodicity of such data collection efforts;
- iii) to define a set of indicators which countries could use after adaptation to detect health manpower imbalances;
- iv) to design approaches countries could take to develop national indicators, as above;
- v) to identify the institutions which could be mobilized for further research in health manpower information systems and indicators;
- vi) to promote the utilization of health manpower information and indicators for decision-making in Member States.

In the four days of the Consultation, participants emphasized that there was a need to take practical steps aimed at the promotion and development of national mechanisms for the systematic collection, processing, analysis, feedback and application of health manpower information. This was a necessary prerequisite for Member States to plan and manage their health manpower efficiently within the available resources.

In response to this need, and as a first step, it was agreed that the Organization would resume the collection of health manpower data in conjunction with its promotion of a "Common Framework for Monitoring Progress in Implementing Strategies for HFA/2000" (CFM) and the corresponding Framework for Evaluation. This would provide a basis for identifying national and global trends in health manpower development. The Organization should also advise, when required, on the establishment of appropriate data systems in countries. Country-specific indicators, based where possible on national surveys, should be developed to provide guidance to Member States to plan for the right numbers and kinds of health workers and their optimal use in the health system.

The draft Annotated Agenda of the Consultation appears as Annex 1, and the List of Participants as Annex 2.

2. Historical perspective

Since 1948, the World Health Organization has collaborated with Member States in areas related to health manpower information.

A number of meetings devoted to different aspects of health manpower information have been organized. In 1968, the Regional Office for Europe convened a Symposium in Budapest<sup>1</sup> on methods of estimating health manpower requirements. This Symposium recognized that the availability of health manpower data, and methods of collection, vary from country to country and that there was the need to know, in considerable detail, the composition and structure of the various professions which comprise the totality of a nation's health manpower.

In 1970, a WHO Scientific Group on the Development of Studies in Health Manpower<sup>2</sup> recommended that WHO consider preparing a detailed and annotated check-list of information, supplemented if necessary by model questionnaires, that had been satisfactorily field-tested under varying conditions. The WHO Expert Committee on

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<sup>1</sup> Methods of Estimating Health Manpower. Report on a Symposium convened by the Regional Office for Europe of the World Health Organization. Budapest, 15-19 October 1968. EURO, Copenhagen, 1969. (EURO 0289).

<sup>2</sup> The Development of Studies in Health Manpower. Report of a WHO Scientific Group. WHO, Geneva. Technical Report Series, No. 481. 1971.

Health Statistics<sup>3</sup>, also held in 1970, stressed the importance of availability of information on manpower resources to staff in the health services. It also pointed out that inventories of health manpower and educational and training resources should be supplemented by data on the precise tasks carried out by different categories of health personnel.

In 1971, the WHO Regional Office for Europe organized a Working Group on the Demographic Aspects of Health Manpower<sup>4</sup>, which stated, *inter alia*, that information on health manpower is an essential part of the good functioning of every health system, as well as of satisfactory planning of the system for the future. Participants believed that adequate information of this kind could only be obtained if a special unit, specifically responsible for information, was attached to each health administration.

In the same year, a Consultation on Health Statistics Projections<sup>5</sup> discussed the identification of the salient components of different categories of health workers, and accepted the need for the use of the International Classification of Occupations. It also defined the problems of non-comparability of national data arising from differences from one country to another.

A Consultation on Health Manpower Statistics<sup>6</sup> in 1972, concentrated on the collection, definition, classification and sources of information, analysis and interpretation, and use of health manpower data. The Consultation recommended that the collection and analysis of health manpower statistics, as a basis for health manpower development should be given high priority in order to maximize investments in the health sector.

The WHO Expert Committee on Health Manpower Requirements for the Achievement of HFA by the Year 2000<sup>7</sup>, held in Geneva in 1983, pointed out that information systems for health manpower management should provide information relating to each component of the HMD process: planning, production and management. The Expert Committee also emphasized the need for mechanisms to feed back data obtained by monitoring health personnel in the planning, production and management sub-systems, so that adjustments could be made in those sub-systems according to changing realities. It recommended the development of country-specific health manpower indicators, in conjunction with global indicators, to monitor the progress of HFA.

The urgent need to collect relevant information on health manpower in order to assess the current situation, determine future trends and estimate possible changes necessary in the supply, distribution and employment of different categories of health workers, was underlined by the recommendations of the 1986 CIOMS/WHO Conference "Health Manpower Out of Balance: Conflicts and Prospects"<sup>8</sup>. This conference highlighted the very serious problems of imbalances that are diverse and complex and take different forms. Recommendations included the development of a set of reliable and feasible national norms

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<sup>3</sup> Statistical Indicators for the Planning and Evaluation of Public Health Programmes. Fourteenth Report of the WHO Expert Committee on Health Statistics. WHO, Geneva. Technical Report Series No. 472. 1971.

<sup>4</sup> Working Group on the Demographic Aspects of Health Manpower. Paris, 16-21 June 1971. EURO 4103/1.

<sup>5</sup> Report on Consultation on Health Statistics Projections. Geneva, 21-27 September 1971

<sup>6</sup> Consultation on Health Manpower Statistics. Geneva, 23-27 October 1972.

<sup>7</sup> Health Manpower Requirements for the Achievement of Health for All by the Year 2000 through Primary Health Care. Report of a WHO Expert Committee. WHO, Geneva. 1985. Technical Report Series 717.

<sup>8</sup> Health Manpower Out of Balance. Conflicts and Prospects. Highlights of the Acapulco Conference. XXth CIOMS Conference, Acapulco, Mexico, 7-12 September 1986.

and indicators of imbalances, based on accessible data; and appropriate relevant mechanisms to identify and monitor changes. This requires the systematic collection of relevant data, supplemented by decision-linked research.

### 3. Data collection

The participants discussed the present situation, based on their own experiences, with regard to data collection at country, regional, and global levels.

3.1 Data collection at country level Very considerable variations exist between countries. Frequently there is no information support system or it is underdeveloped. Record systems are poor and interaction between managers of health manpower and accounts departments is often lacking with the result that even basic numerical information is either not available or is incorrect. The main problems are:

- i) no distinction between data on work posts (demand) and data on active personnel (supply);
- ii) information is often restricted to the public sector;
- iii) the situation of physicians is always better known than that of any other category in the health workforce;
- iv) some categories, such as nursing, are badly defined, so that it is impossible to make comparisons between countries;
- v) no data are collected on required and actual competency profiles of different categories of health workers.

While some countries attempt to get information from national population censuses and other specific surveys carried out by statistical agencies, many do not recognize the value of information on health manpower, or consider their needs only in the short term. They ignore their long-term need for information to identify trends and make long-term projections. The situation is slowly improving, however, due to the growing recognition of the importance of adequate and relevant health manpower information.

In Thailand, for example, following the introduction of country health programming, data on manpower is collected by categories, urban-rural distribution, types of institutions in which they are employed, annual output from various training institutions, and medium or sometimes long-term projections are based on estimated attrition rates. The analysis of the data deals mainly with the identification of mis-match between requirement and supply, quantity, quality and distribution. The private sector is expected to grow as the economy further develops.

In the Americas, four countries: Brazil, Canada, Cuba and the USA have fairly extensive systems to monitor their health manpower. The variables cover categories, geographical distribution, physician migration, specialization, admissions and output by schools. Speciality distribution is emphasized mainly in Canada and the USA, which are the most concerned by issues related to migration. Many countries, while they collect some basic quantitative information, have no qualitative analyses or policies on health manpower.

In the European Region, the degree of importance given to data collection and analyses varies greatly among countries, depending partly on the degree of centralization of health services as well as the existence of national health services. Most countries have basic figures on their health manpower although these figures may vary according to the source. Israel, Portugal, Spain and Sweden pay particular attention to health manpower information systems. Others, for instance Italy, may only collect information on three categories. The current awareness of an oversupply of certain categories of manpower, particularly physicians and dentists, has created a demand for better data collection and alternative projections. All countries in the Region, except Austria, Belgium and Italy, have policies to limit medical school intake.

3.2 Data collection at the regional level AMRO/PAHO gathers data on health manpower, generated through the AMRO/PAHO representatives in the different countries. This is far

from being a reliable source since there are no regular information mechanisms at country level. FAHO plans to organize a workshop (Costa Rica, 1988), to discuss the methodology of health information management and research. It is also developing software to store health manpower information, with models of integrated data bases.

The European Regional Office has an agreement with the Centre de Sociologie et de Démographie médicales in Paris, a WHO Collaborating Centre. Since 1986, the Centre has built up a European Health Manpower Data Base with some financial support from EURO and the French Government. The Base contains: (i) data collected until 1982 by Headquarters on the various health professions in each country; (ii) data collected by the Centre since 1983 from national statistical yearbooks or other national publications. These two categories are "global", i.e., one figure for one profession in each country for each year. During the coming year, two operations are foreseen: (i) checking or completing the data contained in the Base by national ministries of health, national statistical offices or national bodies; (ii) collecting data on the training system (numbers of students, graduates, etc.) of the main health professions.

The utilization of information is not sufficient. There is a vital need to show potential users how the data can be used. This is achieved through: (i) the publication of the "Working Papers of the Base" in English and French in the Cahiers de Sociologie et de Démographie Médicales; and (ii) the publication, also in English and French, of "Characteristics, Structures and Dynamism of Manpower for European Health".

During the next three years, it is intended to include more detailed information (geographical distribution, age-sex structure, speciality distribution, etc.) on the main professions.

### 3.3 Data collection at global level

From 1950 to 1982, data on health manpower at the national level were requested each year through a questionnaire. For about 10% of the countries, they had to be extracted from national publications which were also used for verification purposes in cases of inconsistent information. Data were routinely provided by the majority of Member States.

No other type of health statistics is regularly reported by so many countries which is, in itself, an indication of the key role health manpower plays in the organization of national health care systems.

The international data collection scheme was introduced more or less without prior systematic and concerted action. No internationally agreed upon classification or nomenclature of health occupations, indispensable preconditions for clearly-defined categories and comparable information, had been developed. Instead, working definitions were inserted in the questionnaires and respondents were asked to indicate major departures from these. Most countries face a problem of heterogeneity of data for one and the same occupation, depending upon the source of information.

In addition to the problems of quality and comparability referred to above, some of the major limitations of this data collection system are:

- Health manpower statistics are poorly developed in the majority of countries. Often, they are limited to ascertaining only annual totals for the health occupations. There is no indication of what functions health personnel are performing, nor in what parts of the country they are concentrated.
- Data are limited to the supply side and frequently without any linkage to educational statistics. Even for supply statistics, important demographic information or geographic breakdowns are often missing. Available statistics are usually "stock data", and no "flow information" is available.
- No data are collected on the utilization pattern or living and working conditions of health manpower, or on occupational mobility and unemployment within the health professions.

#### 4. Health Manpower Information Requirements

The development of health manpower - its planning, production and management - in ways that are efficient, as well as relevant to the health needs of the population, is one of the crucial, and largely unmet, challenges of the health system today. Health manpower should be planned in specific response to the needs of the health system. Thus, health personnel should be planned for and trained in order to ensure the right kinds of manpower at the right time and in the right place.

To be able to undertake this type of planning and enable appropriate policy-related decisions, relevant and up-to-date information is essential. The lack or paucity of such information was recognized by the Consultation as being a major stumbling block to the development of integrated health systems and manpower processes, at both country and global levels.

##### 4.1 Uses of Health Manpower Data

World experience in the domaine of health manpower, its supply/demand balance and production costs, is both limited and poorly documented. It was stressed by the consultative group that, unless manpower development patterns appropriate to the country's health needs and goals are properly planned and designed, the desired HFA or national goals will not be achieved.

The consultation viewed information on health manpower both as a support to national and international health policy and planning, as well as a means to influence existing policy, especially within the goals of HFA and PHC. People responsible for the broad areas of health policy formulation, planning and management on the one hand, and the production (training) side on the other, were identified as the main direct users of health manpower information. Only with constant feedback can the necessary adjustments be made. In addition, WHO was recognized as an important user of this information, in consideration of its role in developing techniques and methods to support countries in their manpower development plans, as well as its responsibilities in international information exchange.

The main users of health manpower data were thus recognized to be:

- Government agencies
- International organizations
- WHO technical programmes;
- Universities;
- Business organizations and individual research workers.

The main objectives for collecting this information was agreed as being principally for:

- (i) the formulation of policy and planning at national and international levels vis-à-vis achieving national health goals and contributing to HFA strategies;
- (ii) the development of standard methodologies to estimate supply need;
- (iii) production of manpower in the required categories and numbers, and their equitable distribution to avoid imbalances;
- (iv) coordination of national and international manpower flows and location;
- (v) the exchange of information between countries to facilitate international comparisons;
- (vi) the development of a data base for the use and reference of countries and other bodies for research and development.

The data should, therefore, be adequate for the monitoring of relative proportions and changes in specific manpower categories. It should facilitate the definition and analysis of trends, and lead to relevant policy analyses with respect to the health goals of the country, and to determine imbalances and inequities in geographical and occupational terms.

The group considered three types of information vis-à-vis their uses. These were information on i) manpower supply, ii) policy and programme, and iii) production/training.

i) Manpower supply information was generally agreed as being essential not only for a "point prevalence" or snapshot of the existing situation, but also to build time series for more dynamic health manpower planning. Besides the assessment of current manpower supply and attrition rates, projections of future supply and needs assessments require this type of supply data.

This, in conjunction with data from other categories, would serve to highlight incongruities, irrelevance and imbalances in the current manpower structure and education. Planning can thus be rationally reoriented to address identified weaknesses in the health structure. Health manpower imbalances were recognized as being one of the critical issues for which appropriate data should be collected. The definition of this appropriate data is unresolved in terms of specific indicators. The discussion went along two lines of thought: where an imbalance is to be determined by a perception or a national "subjective" judgement, or to try to define imbalance from the consumer's perspective using imbalance indicators such as average waiting time for consultation or trends in fees or earnings. The former was questioned in terms of the usability of this type of information as a reflexion of reality (and not as a reflexion of the views of an important interest group).

It was agreed, nevertheless, that manpower data collection should be designed to generate information on supply (current and projected). Appropriate techniques should be used to match the supply of different types of manpower categories vis-à-vis the country's health/disease profile, its actual and planned health system and demographic structure and financial resources. This requires the development of effective feedback mechanisms.

The use of manpower supply data and feedback for the identification of geographic maldistribution of health personnel was recognized as being an important use, particularly with respect to assessing equity in access to care by all individuals or communities.

(ii) Manpower policy and programme information may be qualitative and serve first, to establish whether or not a policy exists and, second, whether it is coherent with the stated health policy, strategy, needs and programmes as well as economic resources of the country. This implies manpower policy analyses and thus, methods (standard) to undertake this at country or regional levels, need to be developed if a coherent and useful data base is to result.

(iii) Production and training information is essential for estimating the flow and projecting supplies mentioned in (i). The knowledge of the number of institutions, how many and what type of personnel they produce, and their production costs, is imperative for health resource allocation and cost-effective analysis purposes. Information on appropriateness of training facilities in terms of costs, kind of training, and period of training, will allow the identification and design of proper adjustment policies for a manpower structure more suited to a country's health needs and financial constraints.

Information on enrolment and graduating classes from training institutions, and period of training, will permit calculation of drop-out rates, entry levels into labour force and manpower production capacities. This information will support directly the health planning and programme development processes. Lastly, mismatch between training and actual job requirements can only be identified by the analyses of the type of training provided, and the functions of health workers providing the types of health care prescribed by the health plan.

In conclusion, a health manpower data base, at the global level, besides providing essential information for HFA monitoring through information on distribution, supply and appropriateness of a country's manpower structure, will also provide a credible advocacy base for WHO policies for health development. This data base can also provide an international information base wherein all countries can exchange, share, and use information for their own progress and development.

#### 4.2 Health Manpower Imbalances

Identification of health manpower imbalances - geographic, occupational or numeric - was emphasized as being an important objective for manpower data collection.

Although Resolution WHA40.14 requests Member States to develop indicators for health manpower imbalances, and WHO to support these efforts, the issue of determining imbalance itself is different. Imbalance has been defined as a discrepancy between the numbers, types, functions, distribution and quality of health workers, on the one hand, and a country's need for their services and ability to employ, support and maintain them, on the other. However, in comparing the supply with the demand and need for manpower, it is quite evident that no universal or global norm is possible. Although, because of perceived over-supply of physicians in many countries, attention has been drawn to the question of imbalances, this perception varies greatly from country to country. For instance, in analysing the physician/population ratio among the Socialist countries in Europe, the ratio varies from approximately 2.13 per thousand population in Poland to 4.2 in the USSR. However, neither country claims to have an imbalance either as an over-supply or under-supply of physicians.

It is thus quite evident that perceptions of imbalance are rooted in policies and characteristics of the national health system, the interactions and perceptions of interest groups, and the ability to generate a consensus that imbalances exist. It is of a higher order of complexity than merely a comparison of numbers or setting up of norms.

It is well accepted that any data for detecting imbalances must be country-specific and be developed as a product of interactions between different health professions in the country. Thus, no global figure or indicator can be given around which one could measure imbalances of health manpower. In addition, imbalances can only be measured as trends in some characteristic of manpower and not from a static picture of the situation at the particular time. In other words, while the growth or diminution of physician/population ratio could indicate a growing imbalance, the ratio itself at a particular point in time will be inadequate for the purpose. It is important to keep in mind that data for measuring imbalances can seldom be differentiated completely from data to measure other aspects of health manpower development processes.

The Consultation recommended country-specific research into certain aspects of imbalances should be undertaken as a first step to improve health manpower planning. It also came to the realization that any such research would lead to the examination of health manpower policies, and the complex interplay of forces between interest groups involved in the provision of health care. Indicators of imbalance as diagnostic tools will hardly be sufficient since they will have to be interpreted and put into the context of existing manpower policies and their possible changes. Thus, the research may start with development of indicators but must end by meeting the information needs of decision-makers, and thus influence health manpower policies. In the same sense, the research must delve into the power structure within the country, the relationship between different groups, and the possibilities of coming to compromise solutions acceptable to the majority of the parties concerned. In other words, the research must include aspects of group behaviour and group dynamics, and the role of power in dictating manpower policies.

#### 4.3 Health Manpower Indicators

A series of indicators were proposed both for purposes of policy and programme analyses, as well as estimating manpower supply and requirements in the absence of direct recording or registries to provide data. The proposed indicators are classified in groups

according to the area of principal use, but meant only to indicate broadly a reason for their selection. Evidently, several of these indicators can be used for different purposes.

While the indicators must be adapted to the conditions of a country, there will always be exceptions whereby the proposed indicator may not be valid for a particular country due to the peculiarities of circumstances.

### Proposed indicators

#### Orientation of health care

1. Percentage of health budget spent in primary care and in secondary/tertiary care hospitals and in urban as opposed to rural areas.
2. Proportion of professional health manpower working in primary care and in hospitals above the district level.
3. Trends in personnel trained for geriatric care.
4. Specialized physicians as compared to general practitioners.

#### Equity

1. Selected manpower/population ratio in different provinces/states/districts.
2. Trend in access of population to organized health care (e.g. percentage of population living within 5km of a health facility).
3. Vacancies by geographic areas (provinces/districts).

#### Functions/performance

1. What types of personnel perform/assist in births/deliveries.
2. Deviation from established norms of service, if they exist, for selected health conditions.
3. Proportion of districts having integrated health management teams.
4. Growth of recycling/continuing education courses to add new skills and improve performance.

#### Economic

1. Proportion of health budget allocated to salaries, drugs, equipment.
2. Trends in earnings (or fees for service) for selected categories of health manpower.
3. Trends in public/private sector expenditures.
4. Rate of return on education (health and other sectors), e.g., earnings as a ratio of cost of training.

#### Numerical imbalances

1. Trends in manpower/population ratios over a 5-10 year period.
2. Trends in numbers of graduates over a given period.
3. Trends in under-employment or unemployment.
4. Trends in ratios of number of graduates to number of recruitments by public sector.
5. Trends in ratio of manpower in public/private sector, etc.

Imbalances in quality of graduates

1. Number of schools for the health professions that have revised their curricula towards primary health care.
2. Proportion of curricula oriented to primary health care.
3. Proportion of time a community nurse spends in the community.

Occupational imbalances

1. The ratio of nurses or other categories of health workers to doctors.

5. Data Collection and Use

5.1 Setting up an information system at country level

Most countries have already established some form of health information system, including a subsystem on health manpower. However, methodology and the potential usefulness of an established system, particularly the health manpower information sub-system, needs to be assessed, first and foremost, on the basis of each country's ongoing efforts to strengthen its health manpower development. The issues of a desirable health manpower data base each country needs for the development of its policies and plans, and for the improvement of management of its manpower resources, are always at stake. Without clarifying these issues through direct consultation or dialogue with programme managers and policy decision-makers, it is difficult or unproductive to try to decide on where and how the existing health manpower information sub-system needs to be developed.

In most countries, the foci for data collection and analysis are scattered among units responsible for keeping personnel records, public accounts including payrolls, and health statistics or information services. In some instances, health planning/budget and personnel administration units do keep, as well as update and analyse, information of health manpower on either an ad hoc or a routine basis. Administrative offices of various educational and training institutions are the most reliable sources of data on production or future supply of health manpower. Based on this situation, a system needs to be devised at the country level to coordinate data collection and analysis activities among the existing foci. Although there is, in some countries, a growing awareness of the need to do so, progress has been slow. This has been due to resource constraints, especially shortage of skilled manpower able to manage this coordinating work and willing to accept the challenge of the roles they have to play.

The existing health manpower information sub-system of the country needs to be analysed critically, and its strength and weaknesses identified. This provides an opportunity for future evolution or development of the system, provided the costs to be incurred are affordable and justified. Since the health care system continues to expand rather quickly and continuously in most countries, it is highly likely that manual or simple technology of data handling will prove insufficient, and more sophisticated but cost-effective technologies available will have to be used. In such cases, collaboration with WHO or designated centres competent in this field to advise on suitable data bases and information collection methods is both desirable and is already resorted to by many countries. It has to be kept in mind, however, that any such collaboration should be successfully centred on an action-oriented type of effort which can bring to light the nature and magnitude of the problems of imbalances, or can serve the purposes of improving management of manpower resource in the country. This would require close interaction between information experts, planners, and decision-makers. A built-in mechanism or system to feed back relevant information to potential users has to be designed, and sufficient attention be paid to improve techniques of data presentation to meet the needs and comprehension of different levels of decision-makers.

## 5.2 Setting up an information system at regional and global levels

Regional offices will be primarily responsible for data collection on health manpower as defined in section 5.3 below. Data collected periodically from countries will be an integral part of regional databases, as is the case in most regions with data collected on global and regional indicators.

Data collected by regional offices will be transmitted to HST. A databank will be created and maintained in HST at the global level. After a routine validation process, information will be published periodically in the World Health Statistics Annual and other selected publications. Results of the exercise will be evaluated after the first two years and, if needed, adjustments will be made.

In order to keep data requests to Member States to a minimum, other relevant sources will be investigated, for example ILO, UNESCO, and other international organizations that may be collecting health manpower data from national sources. Full use will also be made of national or regional institutes active in this field, and the setting up of a network of WHO collaborating centres could be considered.

Both regional and global levels will collaborate with countries in establishing or strengthening national information systems in support of health services management. Research tools will be developed in order to strengthen health systems management. Further, technical cooperation in the area of national data base development will be promoted by WHO. This might include, as necessary, support in the selection of appropriate hardware and software.

As emphasized during the consultation, WHO should contribute at all levels to the development of national capability in defining, collecting, analyzing, interpreting and presenting national data. In order to maintain comparability of information, estimation methodologies will be developed (at HQ and/or regional office level), for use by countries, particularly in providing estimates of health manpower in the private sector. These skills should be developed as part of the overall effort to strengthen health system management.

## 5.3 Minimum data to be collected by WHO

The Consultation recognized that WHO had an important role to play in providing technical support to countries in their efforts to obtain relevant health manpower information as a support for decision-making. It should also act as a clearing house or vehicle for information exchange among Member States and provide information on trends. The minimum data to be collected at global level should meet the basic requirements of national users as well as the needs of WHO programmes. An important element would be to provide information for the HFA monitoring/evaluation exercise, particularly with regard to the data provided on distribution of health resources.

By the end of June 1988 the global level will provide regions with a proposed list of categories of personnel for which data may be collected. Relevant technical programmes will be requested to review the definitions for each of the categories retained for collection of information.

Data collection may also be envisaged on specific topics such as training institutions, including enrolments and graduations. The Organization at present collects such information for its World Directory series in connection with medical schools and schools of public health. A coordinated effort between regions and HQ will be necessary to ensure similar approaches. As indicated during the consultation, the Common Framework for monitoring and evaluation should be revised in order to incorporate items to refine qualitative indicators in relation to manpower policies.

## 5.4 Periodicity and mechanism of data collection

The Consultation proposed that data to be collected should form an integral part of the HFA monitoring and evaluation process (CFE/CFM). Country data should be collected

before the end of 1988 for the latest available year(s) to enable publication with the CFM report in 1989. WHO Headquarters will provide forms and instructions in English and French which should be sent to governments with a covering letter from the Director-General or the Regional Director. After 1991 this data collection will be timed to coincide with the national monitoring/evaluation of the HFA strategies undertaken every three years using the CFF/CFM.

Information would be sought on both quantitative and qualitative aspects of the planning and management of the health manpower system within countries. The qualitative information would relate to such matters as whether or not countries had developed a health manpower planning process and on health manpower policies. The CFF/CFM could be used to obtain this qualitative information.

With regard to the quantitative data collection to be undertaken by WHO, it was recommended that WHO append a questionnaire to the CFF/CFM for distribution to Member States every three years. The first time this mechanism will be employed will therefore be in conjunction with the 1991 CFF/CFM for which data will be sought for the latest available year during the period 1988-1990 inclusive. The views of regional offices will be obtained on whether the data should in fact be collected for each of the three years to facilitate the identification of trends.

For the period prior to 1988, it was recommended that WHO request quantitative data for all calendar years covering the period 1983-1987 inclusive (i.e. the period during which the collection of health manpower information was suspended). This retrospective collection is justified in terms of the 1988 HFA Monitoring Report (i.e. as an integral component of the HFA monitoring process).

#### 5.5 Disaggregation of data

The Consultation considered various levels of disaggregation of the data and recommended that it should be along two axes:

Public versus private sector All data should be requested for the public (i.e. government including local government, and should also include ministries other than health), and the private sector separately. Personnel in the public sector would be those employed (salaried) by the government, not those reclaiming fees. In many cases countries will be unable to provide data for the private sector. However government-endorsed estimates may be available for the private sector for several of the categories of health manpower listed and in this case governments would be requested to provide these estimates to WHO. It was recommended that the Organization should develop methodologies to enable reliable estimates to be made, including ways to avoid multiple counting of persons who work in both the private and public sectors. National institutions could be requested to assist.

Hospitals/outside All data should be requested according to whether the person works inside a hospital or outside it, either independently or when attached to other health establishments. A definition of a hospital should if possible be included.

#### 5.6 Categories of health personnel

It was agreed that the first collection of data on health manpower should be limited to the minimum in order to avoid placing too much of a burden on Member States. The list could be revised or expanded for subsequent collections according to requirements.

The following format and categories were recommended. It was agreed that the draft form should be sent to regional offices for comments, and be field-tested by members of the consultation when travelling. It should be finalized by the end of June.

COUNTRY: . . . . .

completed by: . . . . .

MONITORING OF NATIONAL HEALTH STRATEGY

MANPOWER RESOURCES AS OF: . . . . . YEAR: . . . . .

This investigation on manpower resources is an integral part of the monitoring process of the global Health for All Strategy (refer to document DGO/86.1 distributed to all WHO Member States).

WHO used to collect information on manpower resources for publication in its World Health Statistics Annual. In 1981 the collection was discontinued.

It is now strongly recommended to resume this data collection as part of the agreed cycle of monitoring and evaluation (every three years). Countries are invited to provide information for the latest available year. In case data are also available for preceding years, they may wish to report using separate forms.

Guidelines

The data collection on manpower resources relates to 10 major categories for which a task description is provided. Should the national agreed task definition differ significantly, please specify.

If one or more specific additional categories of personnel are contributing to health services delivery, spaces are provided for these (maximum 3). Please specify title and tasks.

It is expected that data could be disaggregated by public and private sectors: Public Sector should comprise Government employees, local authorities, parapublic sector; Private Sector comprises self employment, profit making institutions. Please specify your own national definition. ....

.....

For each of the above, please identify hospital-based or nonhospital-based personnel. Please also provide a brief description of what you consider to be hospital-based personnel in your area, and therefore covered in the replies in each category.

.....  
.....

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PUBLIC Includes staff employed by Government, local authorities, public sector and social security

PRIVATE Includes staff employed by professional institutions, private industry and commercial firms; includes self-employed personnel.

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CATEGORY TASKS DESCRIPTION

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PHYSICIANS All graduates of a medical school or faculty actually working in your country in any medical field (practice, teaching, administration, research, laboratory, etc.)

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DENTISTS All graduates of a dental school (or faculty of odontology or stomatology) actually working in your country in any dental field

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PHARMACISTS All graduates of a faculty or school of pharmacy actually working in your country in pharmacies, hospitals, laboratories, industry, etc.

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ENVIRONMENTAL HEALTH PERSONNEL(1) Engineers and professional personnel other than physicians specialized in the prevention, control, and management of environmental factors that influence public health. They are responsible for designing facilities, and implementing services for the monitoring and control of the physical, chemical and biological factors which affect water supply, waste disposal, air and food.

(1) Include Engineers (water supply, wastes disposal, air pollution, industrial effluent), Environmental and Food Microbiologists, Sanitary Biologists, Toxicologists, Environmental Health Epidemiologists, Food Inspectors and Chemists, Sanitary Chemists.

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PROFESSIONAL NURSES AND MIDWIVES A nurse is a person who has completed a programme of basic nursing education and is qualified and authorized by his own country to provide responsible and competent service for the promotion of health, prevention of illness, the care of the sick, and rehabilitation.  
A midwife is a person who, having been regularly admitted to a midwifery educational programme duly recognized in the country in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practise midwifery.

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TRADITIONAL HEALTH PRACTITIONERS To be described according to tasks assigned in the country.

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DENTAL AUXILIARIES ASSISTANTS Personnel performing a limited range of diagnostic, preventive, and curative services in dentistry. These personnel often do not have complete dental education of university level or equivalent.

=====

PHARMACISTS ASSISTANTS Personnel assisting in pharmacies, hospitals, or dispensaries to make and dispense medicaments, under the supervision of a pharmacist. These personnel do not have pharmaceutical education of university level or equivalent.

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OTHER INSTITUTIONALLY TRAINED PERSONNEL which are of paramount importance for health services delivery (maximum 3)

CATEGORY:.....

TASKS:.....

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CATEGORY:.....

TASKS:.....

=====

CATEGORY:.....

TASKS:.....

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TRADITIONAL BIRTH ATTENDANTS

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CONSULTATION ON THE COLLECTION AND USE OF  
HEALTH MANPOWER INFORMATION

Geneva, 21-24 March 1988  
WHO Headquarters, Room E-110

ANNOTATED AGENDA

1. Opening

The meeting will be opened by Dr J.P. Jardel, ADG, at 9.00 a.m.

A moderator will be appointed.

Dr K. Uemura, Director HST will present the background and objectives of the Consultation.

2. Data collection and analysis at:

- global level  
HST/GES and HMD staff will present the status of data collection at the global level
- regional level  
regional representatives will present their experiences at regional level
- country level  
other participants will present their experiences at country level.

3. Use of health manpower information

- essential information needs for decision-making, as well as the development of methods and means by which HMI can be analysed and applied by health managers,
- usefulness of HMI for decision-making,
- usefulness of WHO collection of information.

4. Minimum data to be collected by WHO

Minimum data to be collected by WHO should be worked out

- type of resources
- categories to be retained
- disaggregation
- data collection, processing and mechanisms

5. How to measure health manpower imbalances

The participants will discuss available indicators and assess their availability and reliability.

New indicators may have to be developed - in which direction? Criteria to be retained will have to be defined.

6. Action at country level

Action at country level should be envisaged in two or three countries. The Consultation will recommend the type of actions to be undertaken, the institutions to be approached and activities to be implemented.

7. Action at regional and global level

- maintenance and linkage of regional and global data bases.

Recommendations for activities of WHO Collaborating Centres will also be drafted.

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CONSULTATION OF THE COLLECTION AND USE OF  
HEALTH MANPOWER INFORMATION

Annex 2

Geneva, 21-24 March 1988  
WHO Headquarters, Room E-110

LIST OF PARTICIPANTS

- Mr Bui Dang Ha Doan, Director, Centre de Sociologie et de Démographie médicales,  
Paris
- Dr Damrong Boonyoen, Director, Health Planning Division, Ministry of Public Health,  
Bangkok
- Mrs D. Guha-Sapir, Brussels
- Dr S. Luculescu, Director, National Health Policies and Systems (NHP), WHO Regional  
Office for Europe, Copenhagen - (only on 24 March)
- Dr J.P. Menu, Regional Officer for Health Manpower Development (Management), WHO  
Regional Office for Europe, Copenhagen
- Dr R. Nogueira, Consultant, Development of Health Personnel, WHO Regional Office for  
the Americas, Washington, D.C.

WHO Headquarters

- Dr J.-P. Jardel, ADG  
Dr K. Uemura, Director, HST  
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Mr N. Dreesch, FHE/MCH  
Dr O. Filippov, RPD  
Dr A. Goubarev, HMD/HMP (Joint Secretary)  
Dr M. Jancloes, HSF  
Dr A. Lopez, HST/GES  
Ms F. Mawson, HMD/HMI  
Mr R. Novick, PEP/RUD  
Ms J. Payne, HMD/HPM  
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Ms A. Williams, HMD/MPM

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