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REVIEW OF STATISTICAL ACTIVITIES

RELATED TO HEALTH

Epidemiological Surveillance and Health Situation
and Trend Assessment
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I. Introduction

The purpose of this review is to highlight some of the progress, challenges and future activities of health information support (especially statistical support) to public health action. At this time in global health development, the goal of health for all and the strategy based on primary health care approach remain valid. However implementation of the global strategy for health for all is now being accelerated by the World Health Organization (WHO) with the establishment of a paradigm for health: a framework for a new public health action. In essence this paradigm for public health action is "to accelerate the achievement of health for all Member States and thus health for all people in the world over all phases of their life cycles". In this context health information support for public health action must be reviewed and further strengthened to ensure that at the country level activities are enhanced to generate, process, disseminate and use relevant data for health development.

It is important to note that the Statistical Commission, at its twenty-sixth session, 4-13 February 1991, paid serious attention to the improvement of coordination and integration of international statistical programmes. The Working Group of the Statistical Commission was requested to consider the question of strengthening international statistical cooperation. The Working Group in its initial discussions concluded that the recent global changes "and the resulting additional pressures on the international statistical system created an urgent need to carry out a general review of the structure and operation of the global statistical system and international statistical cooperation, and to develop a plan for a global system that would be more responsive towards meeting the full range of needs, both current and emerging, in an optimal manner." It is hoped that this review could contribute to the reviews which are being undertaken by the Working Group and by the United Nations Statistical Office (UNSO).

It is realized that this review is not an exhaustive assessment. However it is hoped that it could prove useful during the discussions on the strengthening of international statistical cooperation as seen from the health perspective.

II. Current situation

(a) Data collection, compilation, dissemination and technology

All countries have some system of collecting, compiling and disseminating data which are used for health care delivery, health programme management and monitoring and evaluation of the health sector. The system in each country invariably depends on the level of development of the health services themselves. In the more developed countries there are well established systems of vital registration and epidemiological surveillance which permit easy access to detailed information on morbidity and mortality. In the developing countries these systems are at various levels of evolution. During the last decade some developing countries have made progress in the development of their health information systems. However in some countries these systems are so weak that reliable information can only be obtained through special surveys carried out by vertical programmes. Other problems with some systems relate to duplication in the collection and compilation of data, and in many instances to the relevance of the data being collected.

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Timely dissemination of epidemiological information, e.g., the occurrence of certain communicable diseases which are of international interest, has a high priority within the epidemiological surveillance activities of WHO. Information received from countries is processed, and feedback is provided to all countries without delay through the Weekly Epidemiological Record as well as through an automatic telex reply service.

WHO used to request information from countries on morbidity from communicable diseases, health manpower and health establishments through annual questionnaires. This collection was discontinued in 1982 because it was felt to be an excessive burden to countries and of little relevance to the monitoring and evaluation of the health for all strategy. It is now felt, however, that a limited amount of information on morbidity, health personnel and institutions should be collected every three years as an integral component of the monitoring and evaluation of progress in the implementation of the health for all strategy. The generation of this additional information and the priorities for doing so will be done in cooperation with the regional offices.

A data base has been established containing consolidated and validated time series data on global health indicators at national level. Activities to ensure the consistency of data and information disseminated by WHO have been considerably strengthened, including the publication of global estimates of certain health status, services and resource data.

The largest collection of data in WHO is the mortality database. This database contains annual statistics on causes of death by age and sex. At the present time some 80 countries, mostly developed, provide information which is published in the World Health Statistics Annual. It is however not easy to access the information in this database with its present structure.

Even when the data has been collected the compilation and dissemination of the information can be such a lengthy process that the information is no longer useful. With the widely expanding use of microcomputers the delay between collection and dissemination is being shortened. Health informatics is a relatively new technology which is rapidly being acquired by most countries, especially with the easy availability of microcomputers. Progress is being made in making efficient and appropriate use of informatics to support the monitoring and evaluation of health services. In the more advanced countries this technology is being used to assist in diagnosis and in the monitoring of patient care.

(b) Technical cooperation with Member States

WHO has an increasing role in assisting Member States in the assessment of the health of their peoples and of the activities of their health services. For the monitoring and evaluation of the implementation of the global strategy for health for all, common frameworks and formats are provided in order to assist Member States in collecting, analysing and using relevant information for their strategies. Although WHO is asked to report on the implementation of the strategy every three years it has not yet been able to set up systems which can readily provide health information. Moreover despite the efforts and investment in health information and statistics, and in information system development, WHO is not yet fully able to provide relevant health information to its Member States. The development of a system which will allow easy access to country/project health and health-related information is now under discussion.

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The World Health Assembly has called for a plan of action to assist Member States in improving the quality of their epidemiological and statistical information, and the use made of that information in health policies, planning, implementation and evaluation. A priority programme of the organization is the intensified WHO support to countries in greatest need which includes the assessment of their health situation and the strengthening of their health information systems. In response to these priority activities, WHO has adopted four approaches: (a) the promotion and advocacy of the concept of essential epidemiological capacities; (b) the development and evaluation of appropriate epidemiological and statistical methodologies; (c) technical cooperation with countries, particularly those in greatest need; (d) strengthening of global epidemiological surveillance.

In supporting national training programmes related to the collection and use of health information for management, including monitoring and evaluation, guidelines and training materials have been developed. These materials are aimed at training health workers in survey design and execution, and in presenting and using health information. A computer based training package has been developed for use with the Tenth Revision of the International Classification of Diseases (ICD-10). The package contains modules for both new coders and for the reorientation of existing coders to the new classification. Training programmes are being organized; the first of which was attended by more than 40 coders from five of the six regions of WHO.

(c) Coordination

WHO collaborates with other United Nations (UN) agencies and nongovernmental organizations in the field of health. With respect to statistical activities WHO provides information on health to all interested parties and receives information from others. We have collaborated with UNSO in the drafting of manuals for data collection and given advice on data gathering instruments for information in the health field. We are collaborating with the United Nations Children's Fund (UNICEF) in the strengthening of epidemiological capabilities for the Children's Vaccine Initiative. We are also collaborating with UNICEF and the other UN agencies in the development of health indicators for the interagency programme to monitor achievement of social goals during the 1990s, and for monitoring the goals which have been set by the World Summit for Children. It is hoped that the process of national reporting for the mid-decade review of progress toward achieving the Summit Goals, which are related to health, will be accomplished through the third monitoring of the implementation of the global strategy for health for all in 1994, making every effort to have one national report serve both purposes.

(d) Statistical methods

Several methodologies have been developed for or have been adapted to the health field. Among these are sample size determination, survey designs including cluster sampling and household survey design, rapid health assessment methods, methodologies for data analysis, modelling for disease control programmes and the classification of diseases and related health problems. ICD-10 is a radically new coding system which will allow for a considerably increased number of entries to fulfil the request of some Member States for a very detailed classification of diseases. It has now been adopted and will come into use as from 1 January 1993. As mentioned in (b) above, common frameworks for the monitoring and evaluation exercises have been developed. The frameworks contain the main items and pertinent subjects which Member States should report on, and explanatory notes which help to clarify these items and subjects. Other areas of health statistics are in need of further development and strengthening; some of these will be discussed in Section IV.

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III. Challenges and constraints

Many Member States have developed their own health information systems, but from various reports, including the reports which they submitted for the second evaluation of the implementation of the health for all strategy, it seems that at present many countries still require adequate technical support to obtain the information needed for public health action. Most developing countries, for example, are able to report that a high proportion of the population is covered by primary health care. However an estimate of coverage alone is not sufficient; it is important to have information on the accessibility, quality, social equity and sustainability of health care. Furthermore, it is important that the data requested at the global level should be of primary use to countries for their planning, implementation and evaluation activities at local and national levels.

For information to be relevant and useful it should be timely. At the present time there are significant delays between the collection of data and their compilation and use. Therefore many Member States have information which is out-of-date. Furthermore for information to be useful it should be valid. There is a lack of relevant procedures for collecting, validating, analysing and using data in the process of health service delivery and management, and a lack of personnel trained in these procedures at both national and international levels. For example, errors include mistakes during coding and data entry, using incorrect formulae and using false data for population figures. Another problem is that of accurately identifying the date to which the data refer; i.e. is it the date of collection or the date of the report? Often no date is given and the information becomes useless.

While aggregated summary statistics are useful for comparisons between countries, in order to accurately monitor and evaluate the situation at local levels disaggregated information is needed. Another challenge, which might be difficult to overcome, is the definition and use of standard terms for reporting data. If standards are not adhered to it is impossible to compare information over time within countries. For comparisons between countries or for the compilation of regional or global summaries it will be necessary to establish international standards or to establish procedures to make the linkages between standard national terminologies. Training of appropriate personnel in these procedures and standards will be required.

Recent global developments have stimulated an enormous demand for epidemiological information and for the development of epidemiological capabilities within countries in order to assess problems, identify and implement solutions, evaluate the consequences of action, analyse trends and make projections.

Human development is now being considered an integral part of development. It is therefore important that all organizations work together to achieve an international statistical system which will enhance human development. This requires not just the usual interagency cooperation but a closer collaboration among agencies so that, for example, in the development of indicators to monitor the achievement of social goals the relevant technical agencies in each sector should take a leading role. It is also important that requests to governments for information be coordinated in order to avoid duplication of efforts and reduce the overall amount of data requested.

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IV. Future activities

(a) Global support for health information development

It is important for WHO to develop a comprehensive global health information support for public health action. This will include a holistic approach to data collection and continuous monitoring, and an extensive information network.

With the increased need for relevant health information WHO will promote the strengthening of national epidemiological and statistical capabilities in order to improve data collection, analysis, dissemination and utilization.

(b) Data collection and dissemination

The development of databases on mortality, morbidity, disability, health facilities, and human and financial resources will be pursued in order to allow for more reliable analysis of the interrelationships between health and other related sectors.

Plans are being developed to make the mortality data base and other data bases held by WHO technical programmes available to Member States through electronic media to allow direct access to publishable information.

A network will also be developed for the easy access to country/project health and health-related information held within WHO. This network will aim to provide consistent and authoritative information to users in Member States, within the Organization and other international agencies, and thus reinforce the image of WHO as an information-conscious and modern organization. The network will provide a link to existing databases and will be developed in close collaboration with the technical and other support programmes of the Organization.

(c) Technical cooperation with Member States

Efforts will be made to support the development of national health information systems for the formulation of national health policies, strategies and programmes, programme implementation and their monitoring and evaluation. Support will therefore be given to Member States in the strengthening of their systems of disease and epidemiological surveillance through routine collection of data, and through special studies such as sentinel reporting, sample surveys and *ad hoc* studies. Support will also be given through training and the establishment of guidelines for validating, analysing and using data at local and national levels.

Stronger linkages will be developed between headquarters of WHO and the regional offices in order to enhance the cooperation with Member States in the strengthening of national health information support.

(d) Coordination

To enhance the global support for health information development for the formulation, implementation and coordination of international health policies and strategies, cooperation and coordination will be maintained and strengthened with other agencies in all fields of statistical activities. These will include the review and development of health indicators, the collection, compilation and dissemination of information for intersectorial purposes and the strengthening of national systems of vital statistics and civil registration.

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WHO will also continue to share information with other agencies and to contribute to the reports of other agencies on matters relating to the health aspects of populations.

(e) Classification, indicator and methodological developments

Health indicator development will continue to receive a high priority. With the greater realization that the health status of a population is an important aspect of monitoring development, the measurement of health status is crucial. Therefore, the development of appropriate indicators and the statistical methods required to obtain them take on increasing importance. Those for morbidity and disability will require special attention as they are not yet fully developed. Emphasis will also be given to the best means of capturing and using indicator data at all levels of the health system.

Practical methods for monitoring and evaluating health programme performance in terms of access to care, quality, effectiveness, client satisfaction and cost will be further developed with the collaboration of other relevant programmes in WHO.

The development of methods for future health trend assessment and forecasting, including modelling, in support of national health policy and programme planning will be continued.

Data are being collected and not fully utilized. Meta-analytical methods will be developed to pool, synthesize and summarize this information in order to obtain better insights into cause/effect relationships in addition to providing more confidence about the accuracy of critical health indicators.

Information which enables health managers to make appropriate resource allocation decisions is increasingly important and can be obtained through surveys and methods of rapid assessment. Rapid assessment is often the key to targeting areas of high priority; more work on the development and field testing of appropriate methods of rapid assessment will be pursued.

Geographical information system (GIS) is becoming a useful tool in the field of public health. Spatial analysis of health and health-related problems enable health managers and decision makers to provide appropriate action to priority areas. GIS also allows the analyst to perceive associations and seek answers to related problems which would otherwise not be seen to be related. Methodologies will be developed to use GIS as a tool in local or district health planning and monitoring.

ICD-10 should improve the recording, storage, analysis and use of detailed information on morbidity and mortality. Classifications suitable for use in primary health care will be developed in collaboration with Member States and other relevant organizations. A three character version of the ICD-10 is now being prepared for use in developing countries. Further work is needed to promote the development of a basic framework for the classification of medical procedures, and to promote the revision of the international classification of impairments, disabilities and handicaps and its application. In addition, the development of appropriate classifications of public health action, health personnel, and health expenditure is desirable for managerial purposes. Support will also be given to nongovernmental organizations and specialists in the preparation of speciality-based applications of ICD-10.

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V. Approaches for implementation

Taking into consideration the above it is envisaged that the role of WHO in statistical activities to support public health action must be redefined recognizing the need to build on past achievements which have proven useful. This role must ensure the coordination and cooperation among various technical programmes in health, among Member States, the regional offices and headquarters, and of course among all the UN agencies and appropriate nongovernmental organizations. It must also ensure that WHO can provide relevant information to Member States so that they will be able to strengthen their national health information support in order to collect relevant information for use at national level as well as international level.

The strengthening of health information support on the one hand must be based on firm directions while being at the same time realistic, using a pragmatic approach. Since in many settings the resources are limited it is important to strengthen this health information based on agreed priorities at national, regional and global levels.