



MEETING ON USES OF EPIDEMIOLOGY IN SUPPORT
OF HEALTH FOR ALL STRATEGIES

Geneva, 31 October - 4 November 1988

REPORT



I. BACKGROUND

In May 1988 the forty-first World Health Assembly adopted resolution WHA41.27 : (i) urging Member States to make greater use of epidemiological data, concepts and methods in preparing, updating, monitoring and evaluating their health-for-all strategies; (ii) appealing to schools of medicine, public health and other health sciences to ensure training in modern epidemiology that is relevant to countries' needs regarding their health-for-all strategies and, in particular, the needs of developing countries; (iii) requesting the Director-General to convene as soon as possible a group of experts, including adequate representation from developing countries, to define the desired nature and scope of epidemiology in support of health-for-all strategies; (iv) requesting the Director-General to report to the Executive Board on the outcome of this meeting.

In response to this resolution, a meeting of experts was held in Geneva from 31 October to 4 November 1988. Its objectives were:

- (i) to define the role and contributions of epidemiology in support of HFA policies and strategies;
- (ii) to assess the implications for epidemiological information, research and training in epidemiology in support of HFA;
- (iii) to identify the implications for countries, NGOs, and WHO, and suggest lines of action.

Dr J.-P. Jardel, Assistant Director-General, welcomed the participants and underlined the importance of the epidemiological approach, based on information and analysis, in support of the common goal of health for all, and its foremost target of equity; the data collected by the Member States and WHO constitute a resource which must be elaborated into information and knowledge for action, and these developments have important consequences for training of health personnel at all levels and for research.

Professor A.M. Davies was appointed Chairman, with Professor Jane Baltazar as Vice-Chairman, and Drs W. Dab and C. Oyejide as rapporteurs.

A preliminary plenary session discussed the area of "Epidemiology and health policy". Three working groups respectively discussed the topics of

- information needs for decision-making in primary health care (including district level);
- information needs for decision-making in equity and quality of care;
- information needs for health policies.

Working group discussions were complemented each day through plenary sessions, and the discussions are summarized hereafter.

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11. SUMMARY OF DISCUSSIONS

Uses of epidemiology as a fundamental science in public health, and for IFA policies

The main challenge for epidemiology today is to become an effective instrument in the design and evaluation of health policies and plans. The meeting identified the basic scope of epidemiological methods as providing the ability to measure health problems and risks, to compare them over time and between groups, and to assess the impact of interventions. The main uses of epidemiology can be summarized as follows:

- it can identify and measure the importance of health problems, describe high risk groups and elucidate the cause of these problems;
- it is essential for disease surveillance and control;
- it contributes to the planning, monitoring and evaluation of health services;
- it serves as a key instrument in the formulation of health policies, which may incorporate social, behavioural and economic dimensions in addition to the provision of health services.

Decisional problems become more complex and information available more uncertain as one moves from point 1 to point 4. Efforts are required in developing adequate methods to project the health consequences of different policies, monitoring implementation of policies, and suggesting alternatives as a result of this monitoring.

Activities related to information for determining health policies (including information on equity and quality of care) and for primary health care (including work at district level) should include identification of information needs, data collection, processing and analysis of data, interpretation of the information thus acquired, presentation and dissemination of the resultant knowledge (communication), and use of that knowledge for action. More attention should be paid to identifying existing sources of data and ways of analyzing and presenting them.

Epidemiological information

Epidemiological information must be an essential item of support to decision-making in health. In 1988, the important role of epidemiological studies has been stressed for several of the topics discussed at the forty-first World Health Assembly (tobacco and health, AIDS, to quote but two). Epidemiology is more than an assessment of morbidity and mortality patterns, and the applications of epidemiology go far beyond the study of disease causation: the ongoing reappraisal and adjustment by countries of their health-for-all strategies may require epidemiological studies for ongoing examination and improvement of their health systems.

Too often, decisions regarding public health policies are made empirically, with little or no reference to epidemiological information. It may be that this information is not available, but, too often, available information is not used for improving health problems management. Explaining this gap is difficult and case studies should be encouraged.

To be useful, information must be relevant, selective, condensed, reliable, practical, and comprehensible. The use of unambiguous language, and of clear presentation (text or illustration), emphasizing striking differences in time, space, or between population subgroups, increases the effectiveness of information and its use to non-specialists. Follow-up must also be assessed: how was the information used? What parts of the information were important in deciding upon subsequent action? This has important implications for approaches and methods, for the development of indicators, and for training.

Rather than maintaining a situation where decisions are taken empirically or on the basis of inadequately presented information or no information, planners and epidemiologists must pay more attention to identifying existing sources of data and ways of analyzing and presenting these data, which are often ignored or under-used because their relevance is not made apparent. Adequate information may often be elicited with a modicum of innovation and imagination.

Measurement and analysis: developing a set of essential capacities for an epidemiological approach

There is an essential set of capacities in epidemiology and related disciplines that every country needs in order to achieve the goals of HFA. These essential epidemiological capacities include, but are not necessarily restricted to, the following:

- the capacity to measure on a continuing basis the health status of the population; this requires the measurement of age-, sex- and cause- specific morbidity, disability and mortality, and the capacity to analyze these data by geographic area and by socio-economic characteristics;
- the capacity to measure on a continuing basis the prevalence in the population of exposure to risk factors which have been identified as being of local importance;
- the capacity to measure on a continuing basis key operational variables which describe the functioning and utilization of the health services;
- the capacity to measure the impact of interventions;
- the capacity to analyze and interpret information of these types and to communicate it to policy makers and planners in a manner that is optimally useful and timely; whenever possible, these measurements must be disaggregated by socioeconomic or other subgroups of population.

These points constitute, in the meeting's opinion, the "essential epidemiology" that gives to each country the minimum independence for managing the health problems using an epidemiological logic.

Many countries lack at present some or all of these essential capacities. In addition, progress towards the establishment of these capacities is disappointingly slow. The lack of capacity and progress are major constraints to national policy making and resource allocation in the health sector and represent serious obstacles to the achievement of HFA. Developing the "essential epidemiology" should lead to innovative methodological tools such as sentinel networks, sentinel events, proxy indicators, risk assessment and decisional analysis.

Implications for research

Health-for-all policies and strategies have implications for research. Health situations and problems, and the perception of these problems, may change dramatically (as is the case with the worldwide eruption of AIDS, or the increasing importance of industrial health problems in the developing countries), or progressively (as is the increasing importance of industrial health problems in formerly "rural" countries of the developing world).

Approaches

New approaches and their application to large-scale intervention trials, improved and simplified methods of sampling to determine coverage (e.g., within WHO, the work undertaken in the Expanded Programme on Immunization and the Control of Diarrhoeal Disease Programme), the better use of case/control studies in assessing outcomes of interventions, improved methods for rapid assessment and demographic estimates, decisional analysis methods and the widespread use (and misuse!) of microcomputers, are important elements in planning and evaluation at the service of health policy. These advances in methods must be continued and widely disseminated among practitioners of epidemiology at all levels; such "networking", and the information efforts at regional levels, usefully complement training in this regard.

Support to collaborative aetiological studies must continue in diseases of unclear or complex origin, whether communicable or non-communicable; the fight against AIDS, the MONICA studies on cardiovascular disease and studies on mental disorders, the investigation of side effects of drugs, and the assessment of new drugs and technical advances through controlled trials are obvious examples.

Feedback

The rationale of epidemiological research and the provisional findings must be reviewed regularly and jointly by researchers and users, and encompass possible implications for action programmes, thus enhancing interaction between epidemiology and health policy/management.

Research and health services

Epidemiology is (albeit too slowly) coming to appreciate that the health services themselves constitute an "aetiological factor" affecting patterns of health and disease. Health services research can thus rightly be considered a branch of aetiological research (although it is here considered separately). The investigation of factors affecting the outcome of illness, the prevention of disease or the promotion of health, uses the same methodological rules as studies of disease causation. Processes can be evaluated epidemiologically, but the most important contribution of epidemiology must be in the assessment of outcomes, notwithstanding the conceptual and methodological difficulties this entails. Now that the ideas of primary health care are increasingly accepted and implemented, we need to find out how to quantify the improvements they may bring about, if reasonable decisions are to be made as to where money and other resources are to go. In order that epidemiological efforts for development, implementation and research may bear fruit, resources and activities in ministries of health, training institutions, industry and nongovernmental organizations need to be effectively supported through appropriate foci for liaison and cooperation in WHO.

Implications for training

There is at present little adequate training for "general practitioners of health", combining knowledge of epidemiology as a basic science for the understanding of health problems, the management aptitudes needed to solve these problems. The training required for ongoing surveillance, assessment and research within health services, is essential to help provide innovative solutions to the difficult problems of implementing health-for-all. Expertise in epidemiological methods is vital to rational decision-making in the health services; the lack of such knowledge and know-how underlies the management weaknesses encountered in many countries.

Continuing education of health professionals must take into account changing health needs and health policies; training in the methods of epidemiology is one way of addressing these needs and policies. Training in epidemiology must provide for the implementation of professional techniques in the workplace and in the community, and for

appropriate, target-oriented educational approaches. Health-for-all policies have broad implications for training and educational changes regarding health personnel. The health-for-all strategies should influence the development of professional education at all levels, and several organizations and institutions involved in training plans are meeting this challenge (viz. the initiatives in the Region of the Americas to coordinate and improve epidemiological training, and the development by the Association of Public Health Schools in the European Region of training modules based on the HFA regional targets).

Purpose

An education in epidemiology should help health professionals in acquiring techniques, methods and (good) habits in designing studies, collecting data, comparing the observed and the expected, relating what is done and what could be done (even at very elementary levels of health care and coverage), as well as analyzing and presenting the information in relation to decision-making. In many areas of health training and practice, this approach is one more honoured in the breach than in observance. Epidemiological training should give the study of intervention activities as much emphasis as it does to methodological considerations and the techniques of etiological analysis. Providing practical experience in epidemiological investigation is as important as it is for clinical training, yet even reasonable simulations are rarely available.

Who should be trained?

Training in epidemiology must not be limited to epidemiologists. The majority of health professionals need to receive specific training in order to be able to understand and use the epidemiological approach. Health administrators in particular, who play an increasingly important role in many countries, will use it not only to analyze input data and organization of health services, but also to assess health status, design health care strategies, set priorities, and assess interventions and technical support (including quality of care assessment).

The training of community health and district health workers in epidemiological principles and approaches should in the main enable them to become aware of, and to describe, the health situation in their area, and to understand how this situation arose and how to improve it. They should therefore be trained to be able to obtain information, to record, to count, to classify and to compare data and hence assess the magnitude of the problems so that remedial measures can be instituted. The problem-solving approach is of particular interests in acquiring epidemiological competence.

Role of nongovernmental organizations and WHO

These have a vital role to play in promoting training in epidemiological principles for various health workers: WHO should promote and facilitate national/regional courses/programmes and centres for training, support the designing of training manuals for peripheral and district health workers to incorporate "essential" epidemiological elements, and assist national health authorities in providing appropriate documentation and tools to health staff. Intergovernmental organizations can assist in identifying resources and methods for such training and in the assessment of training activities.

III. RECOMMENDATIONS

Recommendation 1

For the development and implementation of public health policies in support of health for all, the contribution of epidemiology is essential. The meeting recommends that a more active use of epidemiology be promoted in WHO and the Member States at all levels.

The meeting also recommends that WHO, together with appropriate partners, should give priority to assisting Member States in ensuring the existence of a set of capacities in epidemiology, in order to achieve the goals of health for all. The essential capacities include, but are not necessarily limited to:

- measurement of the health status of the population and its trends (this implies measurement of rates of mortality by age, sex, cause, geographic area and socioeconomic characteristics; insofar as possible, selected aspects of morbidity and disability should also be measured);
- assessment of levels and trends in exposure to underlying factors (biological, social, economic, ecological, cultural, political) that affect health;
- detection and investigation of health problems in order to initiate appropriate remedial measures;
- measurement of the use of the health services and trends in such use, by age, sex, cause, and geographic area and socioeconomic characteristics;
- measurement of those variables which affect the operation and use of health services;
- formulation, design and implementation of policies and interventions to improve health status;
- measurement of the impact of policies and interventions;
- analysis and interpretation of information, the communication of results to policy-makers and the public in a manner that is optimally useful and timely, and the incorporation of the findings in health policy.

Recommendation 2

Few countries systematically apply essential epidemiological capacities (see recommendation 1 above) to their activities and programmes in support of health for all, and progress towards the establishment of these capacities is slow. All countries should strive towards this goal, as the lack of capacity and progress are major constraints to national policy-making and resource allocation in the health sector, and represent serious obstacles to the achievement of health for all.

The meeting recommends that WHO should, in cooperating with countries to achieve these capacities:

- support, with appropriate assistance from other organizations and agencies, the formulation and implementation of country activities (including training and research as appropriate) for the enhancement of epidemiological capacities in countries where rapid progress may be particularly desirable and reasonably expected;
- enhance communication between Member States and institutions on the use and promotion of epidemiological approaches.

The outcome of such activities would provide examples and models for future development in other countries.

Recommendation 3

WHO, in collaboration with nongovernmental organizations, should:

- support Member States in developing the application of epidemiological research to the identification of health needs and the design of programmes to reach their goals for health for all;

- support Member States in encouraging researchers to take part in problem-solving research in support of those goals;
- support Member States in developing the application of epidemiological research for the assessment and monitoring of progress towards the goals of health for all;
- support development, in the health ministries and other institutions of Member States, of the capacity to commission and implement epidemiological research, interpret and disseminate its results, and promote the application of these results in health system management.

Recommendation 4

A systematic analysis should be undertaken of the epidemiological knowledge and skills required for individuals employed in health services delivery, health resources allocation, and training in health matters at all levels. This must be undertaken both for Member States and for WHO itself.

An inventory of current training programmes in epidemiology will assist in determining how they meet identified needs and how to adapt current and future programmes.

WHO, its Member States, and appropriate scientific and professional organizations should cooperate in the various stages of such an analysis.

Recommendation 5

WHO, together with other appropriate international bodies and nongovernmental organizations, should consider establishing a joint advisory group or other body to monitor progress in implementing those recommendations.

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