ANNOUNCEMENT

TECHNICAL DISCUSSIONS
WORLD HEALTH ASSEMBLY 1990

THE ROLE OF
HEALTH RESEARCH
IN THE STRATEGY FOR HEALTH FOR ALL BY THE YEAR 2000

WORLD HEALTH ORGANIZATION

Organization of WHO's Technical Discussions

The World Health Assembly (WHA) is the supreme governing body of the World Health Organization (WHO). It meets each year and brings together all Member States to discuss and take decisions on the policies, priorities and programmes of WHO's work.

Representatives of the United Nations, other intergovernmental organizations and nongovernmental organizations in official relations with WHO also attend the Assembly.

Technical Discussions take place each year during three sessions in the first week of the World Health Assembly but they do not constitute a formal part of the Assembly

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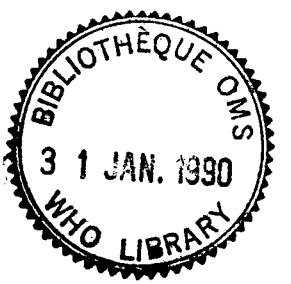

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INTRODUCTION

Health development depends upon implementing plans which call for basic knowledge, applied in appropriate ways within population groups or communities, utilising inevitably substantial resources and requiring suitable infrastructures.

Some would argue that we usually know all we need to know: we should merely apply existing research findings to solve the major problems. However, not infrequently, the necessary knowledge has not been discovered, the ways of applying the knowledge have not been devised and the specific population groups or communities which are the appropriate targets of specific developments have not been identified; furthermore, the available resources are often totally inadequate and a methodology for carrying out the consequentially-essential allocation of scarce resources is not known. In under-developed areas, the infrastructure may be inadequate or absent.

Planning to obtain the knowledge, and the know-how for its use, and to implement action – with all that this implies – is guided by a country's health policies. Some countries may not have a health policy and may therefore decide to formulate a policy *de novo*. Other countries may recognise a need to review and revise their existing health policy because of changing circumstances and imperatives. Can guidance in this process be offered?

Ideally, a policy should be developed on a rigorous basis, to ensure that it is neither the product of political pressure to solve short-term problems regardless of the best long-term interests of the country, nor the result of decisions taken without first identifying the range of relevant factors. What is such a basis for policy formulation? What experience exists?

Once health policies have been defined, it is feasible to start considering priorities. But priorities are not merely lists of urgent and desirable actions; priorities should specify the preferred order or ranking in which problems should be tackled and resources invested. There should be a reasoned basis for the ranking, which must take account of costs and practicalities (possibility of a solution to a problem, the role of research, the cost of the needed research, the likelihood that the country can afford to adopt the likely solution, the availability of personnel to carry

out necessary research or to implement the solution, and so on), and when these factors have been reviewed, the preferred priorities might have to be changed. And the balance of investment in research and for implementation would need to be reconsidered.

So formulating a health policy and setting priorities is inherently an iterative task. In summary then, a basis is needed for policy formulation, together with a basis for determining priorities, within an iterative framework.

The Technical Discussions offer a special opportunity for member countries to:

- look at their priority problems in health,
- consider how best to formulate a health policy to provide overall guidance in planning to solve these problems,
- consider the basis for setting priorities,
- question the available knowledge and know-how that could be brought to bear on the priority problems,
- identify those fields in which strategic and operational research is still needed, and establish how these health priorities influence research planning and research priorities.

OUTLINE OF THE BACKGROUND DOCUMENTATION

As a starting point, the background papers summarise the main features of the current world health situation, focussing also on global demographic and socio-economic trends and on the changing global picture of health status. Health development is progressing globally, concurrently with improvements in health systems function, and further promoted by growing international co-operation; a picture of trends in these aspects has also been assembled.

Not all health problems can be solved. For some, the necessary information exists somewhere; it remains to be located and applied. But in other cases, research is necessary, and should be followed up by the development work that will translate research results into practical actions. A country's problems in the health sector would require a significant targetted research effort, the extent of which may be limited by available financial, physical and human resources. So the background papers turn next to a major issue: the inter-relation between between problems, policies and priorities in health, and the influence of these matters on research policy.

Broadly speaking, the proposed discussions that are introduced by the background papers outlined here will, it is hoped, assist decision-makers to:

- help devise a basis for formulating health policy, a basis for identifying health priorities and a basis for translating these, where necessary, into research priorities;
- assess the cost-effectiveness of investing in strategic and operational research, and the issues of resource allocation both for, and within, research;
- identify the issues that have to be taken into account in establishing or strengthening research capability, and consider appropriate mechanisms for developing an objective basis for reviewing national institutional structures for research organisation;
- analyse the role of international collaboration and the functioning of various possible mechanisms;
- deliberate how best to take advantage of relevant 'frontier research' in science and technology.

A country's health policy should be formulated in the light of its health problems, within the framework of its socio-economic development plans.

Identifying priority problems for research requires that health priorities can be specified; these in turn depend upon the existence of a health policy from which priorities can be set in the light of available resources. In considering these matters it is helpful to identify the relationships between policies and priorities, and the way in which the level of resources influences priorities. Where strategic and operational research is needed to support the attempt to solve health problems, the priorities for research need to take account of health priorities. Of all the problems that need to be tackled, some are more important, more urgent, and perhaps more readily tackled, so the question of priorities does arise. Priorities may only be assigned in the light of factors such as : urgency, likelihood of a solution, cost, likely cost of implementing the solution, and where the problem fits into the resource allocation process.

Priorities in research must take into account the scale of the various problems, the likelihood of successful research solutions and the cost of potential interventions. It may be helpful to plan in the light of disease origins rather than disease mechanisms. The background papers highlight some of the important factors that enter into these aspects of the consideration of priorities. From the experience of the developed countries over the last two centuries, and that of a few developing countries which have made notable advances during recent decades, improved health had mainly resulted from decline of mortality due to infectious disease, improved nutrition (with increased resistance to infection), and reduced exposure due to hygienic measures. This experience supports priorities that can be recommended, particularly for those countries which are as yet unable to sustain all the elements of adequate primary health care. Ultimately the priorities for research depend substantially upon health priorities, and the background papers review the relevant issues – and how WHO efforts could be structured and directed to provide the best assistance to member countries.

One of the major problems in the initiation and continuation of effective health research is that of resource allocation, which can be seen as operating at two levels: in distributing resources for basic biomedical science and for strategic or targetted research, and between different research areas. Decisions at the first level are likely to be largely political; those at the second are more likely to involve both planners and researchers. The management and financing of health research are matters in which researchers, planners and administrators all have a role.

Co-ordination, on the other hand, could usefully be a responsibility of the planners who should have a keen interest in the outcome of the various research projects and would, by this mechanism, be kept in touch with progress – to everyone's advantage.

Another activity that is certainly to the mutual advantage of researchers and planners, is the regular evaluative review by scientific peers, that is, by researchers of standing in the scientific community but unconnected with the specific research team. Some reviews, and certainly the 'final' review, will also raise the question of utilisation of the research results, which must be regarded as a major output of the research activity. Indeed, the adoption of the best possible methods for the dissemination of research results within a country, or the exchange of research results with other countries, is of the utmost importance. While procedures will vary from country to country, regular reviews of methodology must be regarded as vital.

Research depends upon researchers, as well as on suitable institutional arrangements for their careers. Setting up the right arrangements for research is necessary, but taking proper account of the personal interests of research workers must also be recognised as a factor in research capability strengthening. Researchers need a clear career structure through which progression is possible, and also need the opportunity to move into other appropriate professional activity if they reach the stage of being 'burnt out' as original research workers. Some experience suggests that occasional periods of secondment to some other relevant professional activity helps to make the best use of a country's researchers. However many other issues enter into strengthening a country's research capability, and the background papers introduce some of these for consideration.

When initiated between countries for mutual advantage, international collaboration can be a potent means of strengthening research capability in a developing country, at the same time adding to scientific insights that are of interest to a developed country. Mutual advantage is often most likely to be found in research of a strategic nature, but where development is needed in order to apply research results already available in a developed country, the latter may be appreciably advantaged by seeing how the development turns out; workers in both countries would then enter the project as equal partners – an essential element in research collaboration and technology transfer.

This raises the question of technology transfer, and the monitoring of advances in science and technology around the world that may have useful potential for applications in the health sector.

Scientific and Technological Capabilities

Health research and its applications are dependent upon the exercise of scientific and technological capability; the global capability situation is impressive, but strongly weighted in favour of a limited number of countries. Resource constraints operate to a greater or lesser extent in all countries; as a result, priorities for research have to be defined. Coverage of many issues that are of primary importance to developing countries is inadequate or absent. A global picture of these matters has been assembled and appears in the background material.

More specifically, science and technology for development require specific policies and plans, which certainly cannot be treated without regard for other aspects of national development, especially in terms of strategic direction, priorities and the allocation of resources. Developing countries could make considerable use of technology transferred from the developed world, but there are important considerations in both the choice of technology for transfer and the country's consequential needs for a suitable infrastructure.

It may be decided, for example, that the best way of meeting a specific need, say for artificial limbs, is for the country to establish its own production facility based on a new materials technology. This would be a substantial enterprise which would require design, production and servicing facilities, as well as arrangements for limb fitting. It may additionally require a pool of technologists and technicians that have been trained (probably in developed countries) in design and production techniques for the new materials.

There are priorities in the technology to be transferred, just as in the pursuit of science and technology within national borders, and much the same range of constraints exist, leading to the need for health policy and priority guidelines. The choice of technology to be transferred must fit within a country's national policies and priorities. Accordingly, the background papers offer some thoughts on choice and acquisition of the technology sought, on the mechanisms needed for transfer and on the inevitable demands of the implementation process.

Matters of infrastructure involve not just the organisational arrangements, which may be onerous, but the human resources and the possible need for societal development. Some member countries may find that

organisational structures and the development of suitable institutions are the most difficult; others, however, may see societal issues as dominant. The creation of a cadre of trained personnel requires more than training in the strict sense; it needs educational development which, in the developed world, has grown naturally from institutional traditions. A society which does not have the tradition of research is hampered in the creation of researchers and the institutions in which they are to work, and perhaps most important, in maintaining an understanding of their intellectual needs. If the resources of a research institute are controlled by administrators who do not understand the need for researchers to maintain close contacts with their peers – to take a simple example – or who cannot devise a suitable career progression or do not appreciate the standards to be applied, or who do not understand the imperatives of strategic research, then conflicts are inevitable. The frustrations occasioned by such difficulties may well undermine the attempt to construct and maintain a soundly based, strong institution with effective research personnel.

Fundamentally, the education of researchers is greatly influenced by teaching traditions in schools, especially at secondary levels. The creation in a student's mind of the mental habit of enquiring and challenging (a fundamental pre-requisite of research) is not automatic; spontaneous creative ability must be recognised, nurtured and developed. This calls for a tradition of school teaching which is certainly not universal and which may in turn require a strategic programme of societal development.

Information technology (IT) is a development which has such general applicability that it deserves particular attention within the context of its potential for assisting health research. This ubiquitous technology has developed out of the combination of microchip computer and communications technologies. Formally defined, it comprises the technology of acquiring, transmitting, storing in systematic ways, retrieving selective subsets of, and processing information – and displaying the result informatively. Information may take the form of data, or of verbalised 'knowledge'. IT encompasses very much more than data processing, because fast and user-friendly access to various desired subsets of a 'data base', or of the 'knowledge base' – organised in convenient ways and displayed informatively – enormously expands the usefulness of the information in the information base, for scientists, planners or administrators.

Information is the raw material of decision-making. This is true in health planning, health services and health research. The availability of powerful but inherently simple methods of information base manipulation does, however, draw attention to the disparities of information from one part of the world to another, and in the gaps in information that would be required in health research and planning.

It is argued that investment in information technology can be extremely cost-effective when used for the right purposes. Management and monitoring of information technology are important operations and should be planned before investment. This will be elaborated, in the context of health sector applications, in the background papers.

WORKING SESSIONS

Four working sessions are being prepared, and detailed background material is also to be pre-circulated. The themes selected for these parallel sessions are:

1. Nutrition Research
2. Health Systems Research
3. Research Capability Strengthening
4. Recent advances in biological and physical sciences, and their implications for health care

Session 1
Nutrition Research

The Global Advisory Committee on Health Research has identified Nutrition research as a topic of major consequence. This is based on the evidence that improved nutrition has been one of the potent factors contributing to markedly reduced mortality from communicable diseases in the developed countries over the last century or so, and in those developing countries that have been able recently to implement substantial programmes to improve nutrition.

Food, Nutrition and Health:
the need for policy, programme and biomedical research

The role of nutrition in the attainment and maintenance of health, has led to its inclusion in a wide variety of health-related areas.

While the nutritional problems that were identified many years ago still persist, others have emerged with the changes in lifestyle, eating habits, dietary patterns, sanitary environment and social conditions of many populations.

Changes in morbidity and mortality patterns, increased life expectancy, and the possibility of a causal relationship between specific nutrient intake and some diseases (e.g. high fat intake and cancer, or low dietary calcium and toxemia of pregnancy), provide new insights about the role of diet and nutrition in health. Nutrition also has an important influence

in areas not directly linked to health, such as the economic productivity of workers or the school performance of children. On the other hand, social and behavioural phenomena have nutritional consequences, such as the decrease in breast feeding as a consequence of urbanization or working patterns of women. All this has led to renewed interest in nutrition research.

Many of the nutrition research priorities require a multisectoral and multidisciplinary approach. Thus, although the attainment and preservation of health is the ultimate goal, the means to reach that goal require the participation of other sectors, such as agriculture, education, economy, finances, planning and social development, as well as the participation of specialists in various disciplines, such as medicine, biochemistry, epidemiology, biotechnology, food sciences, agriculture, social sciences, education, communications and marketing. Urbanization, migration, emergencies and disasters, economic crises and dependence on food imports are adding important behavioural anthropologic, economic and political dimensions to nutrition research. Furthermore, as new food sources and processing methods evolve and as more knowledge is acquired about many diseases and their risk factors, the needs for biochemical, epidemiological and clinical research become increasingly evident.

Nutrition Research: Why and What for

Nutrition research contributes to the control of disease and the promotion of health. There is increasing evidence, both from developing and industrialized countries, that good diet is a prerequisite to good health. Understanding this role and finding means to enhance it necessarily require additional nutrition knowledge to be created by scientific research in many disciplines – including nutrition itself. Nutrition research is needed, among other reasons,

- for answering practical problems: basically for providing elements for decision-making in relation to programmes and projects (choice of the most appropriate course of action, allocation of resources, evaluation, etc.). Examples: rural development, PHC, control of specific deficiency diseases, educational programmes.
- for policy formulation
- as a contribution to health systems research: it adds an often neglected and yet basic dimension
- for assessing nutrient and diet related problems and understanding their interrelation, their main causes and contributing factors

- for validating the use of nutrition as an indicator of well-being and social progress. The meaning and implications of nutrition as an indicator may vary widely between places and types of societies (example: the use of growth monitoring and/or anthropometry in assessing the effects of readjustment policies)
- for the strengthening of higher education, including the promotion and implementation of the interdisciplinary approach in research and teaching

Session 2
Health Systems Research

Despite the considerable progress made in a number of areas of biomedical research and health technology development in recent years, the health care delivery system in many countries has not always been in a position to fully absorb such advances and to make their benefits available to all. One important means of closing the gap between the development of new technologies and their application in countries is health systems research, which can be defined as research aimed at optimizing the utilization of the techniques and resources available in a country in order to promote health and health care delivery at all levels of the national health system. Health systems research supports national strategies and helps overcome obstacles to health for all by providing decision-makers with evidence as to which health policies are likely to be the most effective, efficient, economic and relevant to their needs, and by providing managers with the technical knowledge to translate these policies into action.

The potential benefits of Health Systems Research, in both costs and outcomes, are widely recognized. Various country reviews and the evalutaion of health-for-all strategies have all shown that, while most Member States have initiated some health systems research and development activities, geographical coverage and progress in quantity, quality and impact to date have been limited.

The problems which, until now, have delayed its full implementation are not theoretical but practical, including inadequate financial, human and institutional resources, failure to tackle critical issues and insufficient interaction among researchers, managers and decision-makers.

Drawing on varied accounts of effort, success and failure and lessons from the past, the panel discussions will address key issues in:

- consensus building to create a suitable climate for the acceptance of health systems research;
- skills development to create a pool of appropriate research and managerial skills;
- consolidation with emphasis on building up viable organizational structures and processes.

Session 3
Research Capability Strengthening

Health research institutions which are scientifically strong and viable are crucial for developing countries to enable them to carry out research on indigenous health problems, to adapt and utilize technologies for health care and disease prevention, which have been developed elsewhere. A strong health research base would allow these countries to participate effectively in the global health research effort. The priorities for strengthening research capacities should meet national needs and not be technology driven or depend largely on the availability of external resources.

It is anticipated that the discussion will deal with issues such as:

- Priorities and approaches for research capability strengthening (RCS).
- Mobilization of political and fiscal support for RCS related activities.
- Role of international agencies.
- Promotion of RCS as a multisectoral process (close involvement of educational and research institutions with Health Services).
- Development of research manpower
  - selection
  - modes and sites of training
  - career structures
- Role of linkages (national and regional), including participation in collaborative research.

Session 4
Recent advances in biological and physical sciences and their implications for health care

The delivery of health care is clearly dependent upon past, recent and future research in the biomedical sciences. But significant contributions, direct or indirect, have come and will come from physical sciences and technology as well, where advances are occurring rapidly. Some of these have the potential to facilitate advances in health care, whether by prevention, treatment or rehabilitation on the one hand, or by improvements in methodology, cost-effectiveness or availability on the other. Four well-known examples of the highly successful use of discoveries in basic science, or technological developments, illustrate the potential in the fields of molecular biology, immunology, lasers and ultrasonics. Practical developments arising from these fields are contributing to diagnosis, prevention and treatment.

Molecular biology and immunology are two fields in which major discoveries and advances have been made that are of great consequence for health care and its delivery. But major relevant discoveries and developments have also occurred in physical science and technology. For instance the invention of the laser and the introduction of imaging technology based on computer aided tomography, magnetic resonance imaging and on ultrasonics has greatly facilitated diagnosis, while developments in enabling technologies such as new materials that will permit the design and manufacture of, for instance, much improved prostheses and orthoses, and systems for more effective design and operation of water purification plants and better reduction of environmental pollution, are making valuable if indirect contributions. So both biomedical science and physical science, as well as technology, have implications for health care.

Supported by a more detailed commentary of important recent developments, the backround material will present a few selected examples to explain some of the possibilities offered by basic bio-medical science, by physical science and by technology that amplify these general points. Specific case illustrations at national and regional level will also be presented.

Member States, regional and nongovernmental institutions are encouraged to share their experiences in advance of the Technical Discussions and to identify crucial issues on which further action is needed.

A portfolio of background documents reviewing the major issues outlined here will be sent to the participants prior to the Discussions.

Member States may wish to encourage the attendance of prominent figures in health research to participate in the Technical Discussions.