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REPORT ON
THE EASTERN MEDITERRANEAN REGIONAL ADVISORY
COMMITTEE ON BIOMEDICAL RESEARCH
THIRD MEETING
ALEXANDRIA, 27-31 MARCH 1978

The views expressed in this Report do not necessarily reflect the official policy of the World Health Organization.

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DIRECTOR
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22 JANUARY TO 15 FEBRUARY 1978
BY PROFESSOR E. AUJALEU
AND PROFESSOR M.L. DOWIDAR
WHO CONSULTANTS

I INTRODUCTION

The Third Meeting of the Eastern Mediterranean Advisory Committee on Biomedical Research (EM/ACMR) was held in Alexandria from 27 to 31 March 1978. It was attended by ten members of the Committee, six resource experts and one observer, and fourteen WHO staff members (Annex I).

The meeting was called to order by the retiring Chairman, Lt. Gen. A.N. Ansari. After welcoming the new members of the EM/ACMR he referred to the commitments of the Committee to the new concept of health services which was designed to benefit previously unserved populations. Health manpower development was another field of great importance for the development of health services and one which it was urgent for the Committee to address. Research support was not evenly distributed among the countries of the Region and he hoped the Committee would look into ways of making more research resources available to enable all countries to undertake the research required to meet adequately their health service needs.

II ELECTION OF OFFICERS AND ADOPTION OF AGENDA

The following Officers were elected by the participants:

- | | |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Chairman | - Dr Chamseddine Mofidi, Chancellor, Reza Shah Kabir University, Mazandaran, Iran; |
| Vice-Chairman | - Dr El Sayed H. Daoud, Director General, National Public Health Laboratory Services, Ministry of Health, Khartoum, Sudan; |
| | - Dr M.E. El Kharadly, Dean, Institute of Medical Research, Alexandria, Egypt; |
| Rapporteur | - Dr M. Abdussalam, Director, International and Scientific Co-operation, Institute of Veterinary Medicine, Berlin, Federal Republic of Germany. |

The Agenda was approved (Annex II).

III OPENING OF THE MEETING

Dr A.H. Taba, Director, WHO EMR in his welcoming address (Annex III) pointed out that the Regional Committee and the recent Ministerial Consultation on Health Services and Manpower Development¹ had endorsed the importance of health services research as a mechanism for developing integrated national programmes of health services and manpower development. Much more and much better information was needed on the health needs of populations, on the existing situation in health services and health manpower development, and on the resources available to develop a long-term plan for health services and manpower development. The Ministerial Consultation had also stressed the importance of collaboration between health and education ministries in health services research.

¹Held in Teheran from 26 February to 2 March 1978.

After a brief description of the work of the Scientific Group on Health Services Research and the Working Group on Social and Behavioural Sciences, Dr Taba referred to the agreements which the Regional Office has entered into with the Bu Ali Sina University in Hamadan, Iran, the Institute of National Planning in Cairo and the Centre for Health Sciences of the Ben Gurion University of the Negev at Beersheba, Israel, to carry out research in health services and related manpower development.

Apart from applied research in health services there were other areas of research, such as clinical pharmacology, rheumatic heart disease and the development of immunization programmes, in which the Regional Office was also active.

Dr Taba concluded by referring to the great interest of the Regional Office in the training of young scholars within and outside the Region. The Office had followed up its 1977 survey of research activities and potential in Egypt, Iran, Iraq, Sudan and Pakistan with a similar survey in 1978 in the Syrian Arab Republic and Tunisia. An important research resource, the WHO Regional Medical Library, had been developed at the Pahlavi Medical Library of the Imperial Medical Centre of Iran.

IV TECHNICAL MATTERS

1. Report of the visiting team to Tunisia and Syria
Agenda item 3(a) - EM/3RD.MTG.ACMR/3 (Annex IV)
by Professors E. Aujaleu and M.L. Dowidar

As a follow-up of the 1977 surveys in Iran, Iraq, Egypt, Sudan and Pakistan, the reports of which had been presented to the Second Meeting of the EM ACMR, Professors E. Aujaleu and M.L. Dowidar visited Tunisia and Syria to survey the current research resources and potentials of these countries. Their report which was presented to the Committee by Professor Dowidar included the following aspects:

- (1) principal health problems;
- (2) overall organization of medical research;
- (3) institutions and establishments carrying out research; and
- (4) general conclusions.

A summary of the report appears as Annex IV.

The situation in the two countries was generally similar to that of the five countries visited in 1977. The most important problems were the shortage of research scientists and technicians, and relatively poorly developed research facilities in the medical schools, due to heavy teaching loads and the competing demands of private practice. There were some excellent specialized institutions which carried out work of high quality in communicable diseases, cancer, nutrition and other health problems. However, little was being done in health services research. Furthermore, the mechanism of research planning and co-ordination needed to be rationalized and strengthened. To this end it was recommended that collaborative research and links among research workers and institutions be encouraged with the object of strengthening local research potential and promoting self-reliance.

The Committee thanked Professors Aujaleu and Dowidar for their excellent work and expressed its appreciation of the efforts of WHO EMRO in the survey and evaluation of research potentialities of the Region.

The reports of these surveys were very useful to the Global ACMR and the Special Programme for Research and Training in Tropical Diseases, and the hope was expressed that other Regional Offices would carry out similar studies.

2. Progress Report on Profiles of Regional Research Institutions:
The Directory of Institutions engaged in Biomedical Research
in EMR

Agenda item 3(b) - EM/3RD.MTG.ACMR/4
by Dr E.I. Hammoud

Dr Hammoud referred to the recommendation of the Second EM/ACMR Meeting in 1977 that the Directory contain as complete data as possible from all institutions involved in biomedical research in the Region. Questionnaires had been sent to all institutions engaged in research but only about one third had been returned. The present Directory listed 200 institutions and gave detailed profiles on seventy-two of them. It was an updated version of the original document presented to the Second Meeting of the EM/ACMR in 1977. It had been distributed to all Governments in the Region, all institutions listed in the Directory, all EM ACMR members, all WHO Representatives, WHO/HQ and other Regional Offices. Updating of the Directory was planned for late 1978.

The Committee appreciated the efforts of the Regional Office and requested that further efforts be made to obtain information from institutions that had not returned the questionnaires. Members of the Committee and WHO Representatives would also continue to help. For the present, the current simple format should be followed, but additional inquiries on trends in research would be useful. It would also be useful to compile a list of research workers in the Region.

3. Review of the Report of the Nineteenth Session of the
Advisory Committee on Medical Research, Geneva,
13-17 June 1977
Agenda item 4
by Dr S. Bergström

Dr Bergström explained the progressive development and current status of the new global WHO research programme. He said that, unlike the basic research and certain special programmes, health service research must be nationally and regionally focused but that there was a need for inter-regional co-ordination and communication. Task forces set up in different countries would need to be financed with national or bi-lateral funds and not from the Regular Budget of WHO.

In the forthcoming meeting of the Global ACMR in June 1978, the main topic on the Agenda would be the relationship between the Global and Regional ACMRs. Other topics would include the Special Programme for Research and Training in Tropical Diseases, health services research, safety measures in microbiology, scientific information systems, and how to raise more funds for priority research areas.

The Committee emphasized again the importance of collaboration and co-ordination in research in the problems common to the Eastern Mediterranean and neighbouring Regions, and in problems of global significance, and reiterated its role in this regard, as already expressed at its Second Meeting.

As the Regional Director had mentioned in his introductory remarks, EM/ACMR had been able to advise the Regional Office on how to develop a cohesive research programme. It was already under way within the framework of the global WHO policy; it conformed to the policies evolved by the Global ACMR and the National Committee of WHO EMR, and responded to the needs of Member States.

The Committee thanked the Regional Director for facilitating the co-ordination and collaboration of EM/ACMR and the global ACMR, and recommended that this activity be supported and continued.

4. Health services research
Report of the Scientific Group on Health Services Research, Alexandria
1 - 2 August 1977 (Doc. EM/RSR/4)

Dr Mofidi introduced the report. The Group had been set up to advise on how best to implement research project proposals for health services and manpower development in accordance with the Regional Director's expression of interest at the second meeting of the RACMR. It had attempted first to develop procedures to identify researchable questions and establish criteria for health services research projects in EMR. It had then reviewed, commented and advised on eleven research draft proposals, of which four were included in the agenda of the present meeting for further consideration.

The Scientific Group had attempted to identify other problems or research areas and made a workable classification of research topics in health services research. Eleven topics in health development research and a series of topics in health manpower development had been identified.

Suitable mechanisms had been suggested for research promotion and co-ordination at the Regional Office. They included different approaches to promoting co-operation among research workers and institutions, and their involvement in the programme; and, in some cases, to the establishment of the first nucleus of research.

The Scientific Group had recommended also the establishment of a system of planning, formulation and guidance, and evaluation of research projects; this would include the formation of scientific steering groups to assist the scientific groups of the EM/ACMR.

Dr W.A. Hassouna then presented two of the draft research proposals which had been examined by the Scientific Group. One of these concerned a comparative study of the challenges to effective health coverage in three countries of the Region, namely Kuwait, Egypt and Yemen Arab Republic. Each of these countries had a different set of constraints and characteristics, e.g. manpower constraints in Kuwait, capital constraints in Egypt, and both of these in Yemen Arab Republic. This study would provide the basis for developing criteria to guide the planning, implementation and design of effective health care delivery systems in the countries of the Region.

The other proposal was for an orientation course on health services research as the first step of a six-year research programme. Dr Hassouna emphasized the need to inform health professionals and administrators of the valuable contribution of health services to decision-making.

The Committee examined the findings and recommendations of the Scientific Group concerning criteria for selection of health services and other research projects, the identification of suitable institutions and researchers, the exchange of research information, and mechanisms of research promotion and co-ordination. It fully endorsed them for further action by the Regional Office.

Among the specific projects which came in for detailed discussion were the proposed studies on the role of traditional medicine in the delivery of primary health care. The Committee noted that this project was to be revised and expanded, and was informed also about the programme being pursued by the Regional Office in assessing the present position of indigenous medicine and its possible role in health promotion and care.

The Committee considered that the recommendation of the Group on the establishment of a continuing system of planning, formulation and evaluation of research projects was particularly important and supported the proposal that a scientific group be set up for each research project or series of projects.

Medical and other categories of students should participate in some of the research projects in order to promote their interest in research and to facilitate continuation of the work in the future.

Finally, the Committee gave its full agreement to the implementation of the project on challenges to effective health coverage and to an orientation course in health services research.

The Committee expressed its appreciation of the work of the Scientific Group and the WHO staff concerned for their excellent work.

5. Report of the Working Group on Social and Behavioural Sciences in Health
Agenda item 5(b)
by Dr A. Robertson

Dr Robertson introduced the report of the Working Group on Social and Behavioural Sciences, which was before the Committee (EM/EMD/379).

Stressing the urgent need which the Group had felt to take a series of well planned steps to promote what the Regional Director had called a "marriage" between the social and behavioural sciences and medicine, he drew attention to certain key sections of the Report, including its general and specific recommendations.

In the discussion which followed, the Committee endorsed the relevance of the Report to all aspects of health services research, as well as to effective health services and manpower development in the Region. It stressed in particular the need to identify social scientists and social science institutes engaged in health services research in the countries of the Region.

It recommended that WHO/EMRO and the governments of the Region pay particular attention to the implementation of the general and specific recommendations of the Working Group on Social and Behavioural Sciences.

6. Research on effectiveness of alternative approaches to rehydration
Agenda item 5(a) - EM/3RD.MTG.ACRR/8
by Dr R. Cook

In reporting on this research project, Dr Cook stated that every year in the Eastern Mediterranean Region between 0.75 and 1 million children under three years of age died of dehydration due to acute diarrhoeal disease. This accounted for 30-45 per cent of under-five mortality, and was probably the largest single cause of death in the Region. It most commonly occurred between 6 and 30 months of age.

Reduction in the incidence of diarrhoeal disease was clearly the right strategy to combat this problem, but it involved investment in sanitation and water supply, and changing habits, and thus represented an expensive long-term programme. However, recently it had been shown that oral rehydration at village level was a short-term measure which held out hope of a fairly rapid reduction in this death toll. A series of trials

throughout the world had shown that the particular glucose-salt formula recommended by WHO and others could reduce case fatality and improve the nutritional status of young children. There were, however, a number of questions which deserved study in order to make oral rehydration as practicable as possible on the widest scale. Trials were in progress in Egypt and Iran and more were proposed to study different aspects of the use of this method in order to make it more widely applicable. For example, controlled trials could resolve the following questions:

- Could the cheaper sucrose be used instead of glucose?
- Was the present 20 g/litre the optimal amount?
- Could the salt be delivered via channels other than the health services, e.g. through village shops and advertising campaigns?
- Should the salt be given for the mother the mix or would it be better to give the solution already prepared in returnable plastic bottles?
- Would intra-gastric drip be more effective at health centres for moderate cases (loss of body fluid equivalent to 5 to 10 per cent of body weight)?
- At the village shop level, would the glucose salts necessarily have to be provided in sachets? Could it be sold in scoopfuls from a bulk packing in the shop?

In the discussion which followed, the Regional Director informed the Committee that a special advisory committee was being set up in the Region to deal specifically with diarrhoeal diseases including cholera. The Committee noted also the trials in progress in Pakistan and India using different delivery techniques and comparing the use of sucrose with that of glucose. It gave full support to the continuation of research into both the alternative systems of providing the use of the technique and ways of making the method cheaper and more widely available by the use of sucrose and non-expensive packing. It was also considered that the technique should be promoted also for suitable cases in hospital as well as in the primary health care system to show clearly that it was not an inferior substitute for intravenous rehydration but a sound method of management in its own right.

7. Drug utilization studies
Agenda item 5(f) - EM/3RD.MTG.ACMR/9
by: Mr N.P.H. Milner

Mr N.P.H. Milner in introducing the subject of drug utilization studies stated that these studies had arisen from a concern about the continuous rise in cost and consumption of drugs. In developing countries the cost accounted for up to one-third of the total health expenditure. Drug utilization studies assisted in determining the kind and cost of drugs that needed to be supplied to health care services. They also assisted in the determination of the skills and the training needed by health workers. They provided an evaluation of the effectiveness of corrective measures applied by training and control authorities.

Continuing surveillance of drug utilization provided indispensable information for health planners and supply organizations, which was particularly necessary in developing countries at this period of emphasis on primary health care.

Drug utilization studies could provide valuable information on over-prescribing or under-utilization of drugs, could identify irrational prescribing and furnish the knowledge necessary to improve the efficiency of patient care. The result would be better utilization of money and manpower.

Preliminary work carried out to date indicated that such objectives were attainable. Trial studies had been carried out in Sudan and the People's Democratic Republic of Yemen using records in rural health units. The results of these studies were presented to the Committee. Further work was required to correlate the findings with the drugs used, to determine the educational needs of prescribers and communities, to identify systems of procurement and to evaluate distribution systems. The Committee endorsed the carrying out of further studies in other countries because the two countries included in the trial so far could not be considered as representative of the Region.

8. Status of biomedical communications in the Eastern Mediterranean Region
Agenda Item 6 - Background Documents on WHO Regional Medical Library and
Medline System
by Dr A.H. Samii and Mr G.A. Guirguis

Dr Samii referred to the difficulties faced by research workers in the Region in getting access to medical information and to the long delays in receiving scientific journals by post.

Up to December 1977, when the service was discontinued, the Region had depended on WHO Headquarters, Geneva for biomedical information. An agreement had now been reached with the Pahlavi Medical Library of the Imperial Medical Centre of Iran (PML) for its designation as a WHO Regional Medical Library and the provision of information services to countries in the Region as well as to Turkey and India. The Library was connected by Medline to the US National Library of Medicine at Bethesda. Requests for biomedical information received by EMRO were sent to PML for processing. It was planned that each country of the Region would designate a national focal point (National Medical Library or Documentation Centre) to handle requests for biomedical information before being relayed to EMRO or PML. When it was technically feasible, terminals (sub-nodes) might be installed in a few countries of the Region.

The PML is using a visual display unit with a twin cassette station and a hard copy printer; a more modern system of communication was under negotiation.

The service was already being utilized; during the period 1 January to 15 February 1978 it had made fifty-eight searches.

In 1979, a regional conference would review the whole biomedical communications system and recommend ways of improving it. By that time, sufficient experience would have been accumulated for appraisal both in the PML and national institutions.

Mr Guirguis described the development of other biomedical information activities with special reference to the role of the Regional Office.

The Committee was very satisfied with the activities of the Regional Office and the developments in this important field and expressed its indebtedness to the Government of Iran and the Regional Office for placing the excellent facilities of the Pahlavi Medical Library at the disposal of medical research workers.

Some of the suggestions for future activities of the Pahlavi Library discussed by the Committee were the indexing of articles published in the regional medical literature, the listing of official reports, theses and dissertations presented to various universities, and the diffusion of other information generated in the countries of the Region. At some stage, consideration might be given to providing a translation service, possibly in collaboration with the UNESCO Documentation Centres already existing in some countries.

The Committee noted the letter and other information sent to Member States about the services available from the PML in its capacity as WHO Regional Medical Library, and suggested that the Governments and WHO continue their efforts to make these services widely known to the scientific community. The governments were also urged to designate, equip and consolidate national focal points as soon as possible. Such national focal points could act also as centres for information on public health and related problems, and could arrange co-ordination of collections of periodicals and photocopying services.

9. Ethical aspects of biomedical research
Agenda item 7 - EM/3RD.MTG.ACMR/12
by Dr J.P. Dunne

Dr Dunne, Secretary, Secretariat Committee on Research Involving Human Subjects (SCRHS), introducing the document (EM/3RD.MTG.ACMR/12) pointed to the need to establish guidelines for ethical review procedures, in view of the increasing amount of biomedical research in recent years. An Advisory Committee on Bioethics had been convened under the aegis of the Council for International Organizations of Medical Sciences (CIOMS), in November 1976, to act as a focus for collaboration between the ACMRs and CIOMS. The CIOMS undertook to provide progress reports of its meetings to the Global ACMR. Members from each Regional ACMR will be included in the Advisory Committee of CIOMS.

The Advisory Committee is to undertake a survey of the procedures regarding ethical aspects in a variety of countries and institutions, and a review of experience in countries with established procedures, in order to propose guidelines for the establishment of appropriate committees on bioethics.

Dr Dunne then described some of the specific issues that influenced the evolution of the code of ethics for experimentation in the biomedical field.

Since 1975, all WHO-sponsored research projects involving human subjects, emanating within WHO Headquarters, had needed formal clearance from SCRHS.

The following issues were of particular concern:

- (1) the need for adequate consultation with national institutions and institutional ethical review committees;
- (2) the question of the legal liability for accident and injury arising from involvement of subjects in research;
- (3) questions of validity of informed consent;
- (4) confidentiality of information;

Inevitably, in the last analysis, each proposal had to be judged in terms of its scientific justification and quality.

It was noted with approval that the Regional Review Committee now had primary responsibility for ethical review of research projects developed within the Region.

The Committee agreed that collaboration with WHO Headquarters was important and that consideration should be given immediately to how liaison might best be established and maintained, to ensure that approaches and standards in relation to ethical issues arising from sponsored research was harmonized throughout the Organization.

To this end it was recommended that Secretary, SCRIHS, and the Regional Review Committee should make arrangements for appropriate exchange of information.

Furthermore, the Committee noted with satisfaction the collaboration of WHO, the Global ACMR and CIOMS in these matters, and expressed the hope that one outcome of this collaboration would be the production of a draft code of practice which could serve Governments in developing their own rules and regulations.

10. Research in clinical pharmacology
Agenda item 8(a) - EM/3RD.MTG.ACMR./13
by Dr T. Fakouhi

In Dr Fakouhi's absence this topic was introduced by Dr A. Khogali. It dealt specifically with problems of drug bioavailability.

There were inherent difficulties in predicting the effect of drug administration in an individual patient. Genetic and environmental influences, disease, drug formulation and the concomitant administration of other drugs, all combined in determining the response of an individual to drugs. This made monitoring of drug therapy mandatory.

There was a lack of clinical data on the bioavailability and bioequivalency of certain drugs as affected by conditions prevailing in the Region.

The primary purpose of bioavailability studies was to determine how quickly a particular dosage form of a drug attained effective tissue concentration compared to another preparation of the same drug, and thus became active in patients who required the drug for prevention or treatment of disease.

In Iran it was proposed to begin investigation of drug bioavailability in respect of digoxin, warfarin sodium, isoniazid and diphenylhydantoin. These studies would be carried out on volunteers rather than patients in order to assess bioavailability only as it was affected by the drug product itself. Their primary objective would be to provide baseline information on the bioavailability of a drug under optimized controlled conditions.

As a start, two research protocols for studying the bioavailability of two commonly used drugs, digoxin and warfarin sodium (coumarin), were submitted for consideration by the EM/ACMR.

The Committee endorsed the work in clinical pharmacology and congratulated the author and WHO EMRO for supporting this type of research. It was pointed out that the Special Programme in Tropical Diseases was developing this discipline in the tropical countries and was willing to provide research training grants as a way of building up research capability for future clinical trials of new drugs.

It was further proposed that institutes and units involved in clinical pharmacology and research in bioavailability should be identified, and efforts made to strengthen them and to promote further work in this area. In particular, the programme of training of clinical pharmacologists should be strengthened.

11. Research on streptococci as related to rheumatic heart disease
Agenda item 8(b) - EM/3RD.MTG.ACME/14
by Dr A.M. El Kholy

The document was presented by Dr Hussein. The Biomedical Research Centre for Infectious Diseases in Cairo, assisted by WHO, had been engaged during the last ten years

in research on the epidemiology, microbiology and immunology of streptococcal infections and their non-pyogenic complications.

Epidemiological studies had established the extent of the streptococcal carrier state and infection, the clinical pattern of disease, and the dynamics of community and intrafamilial spread. They had documented the effectiveness of prophylaxis of rheumatic fever in Egyptian school children.

Microbiological studies had developed simple tools for the identification and classification of β -haemolytic streptococci. They had contributed also to clarifying the kinetics of the streptococcal type-specific antigen-antibody system.

Immunological studies had been concerned with the development of adequate facilities for the identification and quantitation of humoral host response to streptococcal antigens, and for the identification and semi-quantitation of type-specific antibodies.

The Centre was also studying cellular mediated host responses to purified streptococcal antigens. It was developing an in vitro technique to detect delayed hypersensitivity to some streptococcal antigens in rheumatic fever and rheumatic heart disease.

The Committee supported the research being undertaken and complimented the author and the Centre. Similar work was being undertaken in Iran, Pakistan and Tunisia. It was recommended that work in this area should be continued and that a network of projects should be set up to stimulate and co-ordinate the development of appropriate technology for the rapid diagnosis of rheumatic heart disease in rural areas.

12. Studies on evaluation of the vaccination programme in Egypt
Agenda item 8(c) - EM/3RD.MTG.ACNR/15
by Dr N.H. Wahdan

The document was presented by Dr Wahdan. He said that the infectious diseases susceptible to immunization were among the major causes of morbidity among children in Egypt.

There was a lack of information about the effectiveness of the national vaccination programme. The High Institute of Public Health had carried out a study to evaluate the coverage and effectiveness of the compulsory vaccination programme in respect of these diseases. The study had been concerned with:

1. surveillance of the target diseases. Although there had been immunization programmes in Egypt for many years, there was still a high incidence of these diseases;
2. vaccine potency evaluation, both at the production centres and from field visits. The general conclusion had been that vaccine potency was of a high standard apart from a slight reduction of potency of BCG vaccine at field units;
3. assessment of practice of immunization, coverage and public acceptance. A relatively high coverage had been found for DPT and polio. Lower coverage figures for the other vaccinations had been found to be due mainly to supply problems. A number of managerial and technical problems associated with vaccine administration had been found. There had also been problems of public acceptance.

A number of recommendations had been made in relation to quality control, logistics and distribution, training of health workers, and methods of continuous evaluation and monitoring of the programme.

In the discussion which followed Dr Wahdan's presentation he was congratulated on his study and it was recommended that similar studies be made in other countries, especially in connexion with the Expanded Programme of Immunization.

Recommendations were made to include socio-economic studies and determination of the antibody profile of the populations at risk in further research work, with particular attention to factors which promoted community participation. The primary health care strategy of using community members was proposed as one way of improving utilisation of immunization programmes.

The Committee emphasized the importance of setting up similar mechanisms for evaluation at the outset of an immunization programme. An academic research institute could contribute greatly to the evaluation of ministry of health activities.

The Committee noted with satisfaction that the draft research proposals concerning the Expanded Programme of Immunization, which had been presented and discussed by the Scientific Group on Health Services Research, Alexandria, 1 to 2 April 1977, were already under careful preparation, and that a scientific steering group, composed of experts in immunization, communication and social sciences, was to be formed to guide the preparation and the implementation of the programme. The main questions for which answers were sought in these projects were:

- (i) what percentage of children had received, in full or in part, the immunizing agents specified in the programme;
- (ii) if the vaccines were potent;
- (iii) if vaccination had the expected effect. This last question was a matter for a long-term evaluation.

13. Report on the Special Programme for Research and Training in Tropical Diseases - Report of the Research Strengthening Group

Agenda item 9 - TDR/RSG(1)77.3
by Dr J. Barzelatto

Dr Barzelatto in referring to the Report of the First Meeting of the Research Strengthening Group, Geneva, 24-28 October 1977, pointed out that the special programme had two main objectives:

- (1) to develop new tools for control of six tropical diseases¹;
- (2) to contribute to the development of the research capabilities of the countries affected by these diseases.

The Research Strengthening Group had the responsibility of activities leading to the second objective. The first one could be met only by much research concentrated in endemic areas. The countries should be able to continue to carry out research locally in the light of their changing situations and of progress in scientific knowledge. It was therefore extremely important that the research potential of the countries be strengthened and collaboration among themselves and co-operation with WHO encouraged.

Dr Barzelatto discussed also the relationship between the Special Programme in Tropical Diseases and countries' own national priorities and inputs. He gave examples

¹Malaria, trypanosomiasis, leishmaniasis, schistosomiasis, filariasis and leprosy.

of possible centres in the Eastern Mediterranean Region which could take an active part in the regional programme and also contribute to the global programme. Such research centres could be located in the Eastern Mediterranean Region but their designation needed further consideration and consultation with governments and the Regional Office.

In the discussion which followed, the Committee expressed its appreciation of the participation of Dr Barzelatto (TDR/IIQ) in its meeting and endorsed the promotion of research in the Special Programme in Tropical Diseases in the countries of the Region, as these diseases were also priority diseases in those countries. The Regional ACMR should continue to complement the development of the Special Programme in Tropical Diseases and facilitate those research activities as discussed at the Second Meeting (EM/RSR/3).

The Committee recommended also that a scientific working group be established to:

1. assist in the co-ordination of the regional with the global programmes;
2. identify research centres for institution building and the training of research workers;
3. promote better utilization of the facilities and potentials of the Special Programme for Research and Training in Tropical Diseases;
4. advise on how to promote government interest and commitment;
5. assist in the formulation of additional research projects which could be undertaken in the Region within the global programme;
6. promote research activities in all countries of the Region.

The Committee endorsed the project proposed in the report of the Research Strengthening Group (TDR/RSG (1)77.3) for Sudan, and agreed to activities envisaged in Egypt and Iran. Finally, in view of the special features of visceral leishmaniasis in Pakistan, Sudan and Iraq, the Committee suggested that this disease be also included in the programmes to receive WHO support to institutions in the Region.

V CONCLUSIONS AND RECOMMENDATIONS

The EM/ACMR expressed its appreciation to the Regional Director for his keen interest in, and support to, the development of biomedical research in the Region. In addition to the several recommendations incorporated in the body of this report, it recommended that particular attention be given to the following:

1. The EM/ACMR appreciated the valuable information gathered about research potentials and resources in seven countries of the Region and recommended that the Regional Office continue the identification of institutions and resources available for biomedical research particularly for projects in health services and tropical diseases.
2. The EM/ACMR appreciated the additional efforts made since last year to complete the Directory of Institutions engaged in Biomedical Research, but expressed its concern about the non-cooperative attitude of some institutes in not providing information, and urged that every effort be made to complete the Directory and keep it up to date.

3. The EM/ACMR noted with appreciation the Report of the Scientific Group on Health Services Research, endorsed its conclusions and recommendations, and recommended that they be accepted and appropriate measures taken for their implementation.
4. The EM/ACMR considered the proposal on a comparative study of the challenge to effective health coverage, in three countries of the Region, (Kuwait, Egypt and Yemen) to be of utmost importance to the main concern of governments and WHO, i.e., the provision of effective health coverage for the majority of people; it expressed its full agreement to the implementation of the project.
5. The EM/ACMR expressed its appreciation of the excellent efforts of the Regional Office in the training of research workers for biomedical research and, in particular, for health services research, and for the support given to training institutions in the Region. It considered the proposal to conduct an orientation course in health services research to be of great value in this regard and recommended that every possible support be given to its implementation.
6. The EM/ACMR noted with appreciation the report of the Working Group on Social and Behavioural Sciences in Health Services and Manpower Development and considered it of great importance and value for the improvement and promotion of health services research. It recommended that its conclusions and recommendations be accepted and every possible effort be made for their implementation.
7. The EM/ACMR appreciated the work carried out so far in the implementation of two research projects, on oral rehydration and drug utilization. It recommended that these projects be supported and, whenever possible, similar research be promoted and carried out in other countries of the Region.

It recommended also that every effort be made to make the use of oral rehydration techniques and delivery systems more widely available and applicable, including their use in hospitals and out-patient departments.
8. The EM/ACMR expressed its satisfaction at the activities of EMRO in the development of biomedical information services and its indebtedness to the Government of Iran and the Regional Office for placing the excellent facilities of the Pahlavi Medical Library as a WHO Regional Medical Library and Information Service at the disposal of medical research workers. It recommended that WHO EMRO continue its support and collaboration in the development of the biomedical information services, and give special emphasis to information generated within countries of the Region. The Committee further recommended that information on the availability of this service be widely disseminated among scientists and interested academic and research institutions.
9. The EM/ACMR appreciated the effort of the Special Programme in Tropical Diseases in support of special research projects, strengthening research institutions and the training of research workers, and further expressed its satisfaction with the activities of EMRO to support and develop research on tropical diseases of importance to this Region, in harmony with the global programme.

It recommended that these activities be further pursued and, to this end, to consider the establishment of a scientific working group with the following functions:

- (a) to assist in the co-ordination of the regional and the global programmes;
- (b) to identify research centres for institution building and the training of research workers and supporting staff;

- (c) to promote better utilization of facilities and potentialities of the Special Programme for Research and Training in Tropical Diseases;
- (d) to advise on how to promote government interest and commitment in the countries of the Region;
- (e) to assist in the formulation of additional research projects which could be undertaken in the Region within the global programme; and
- (f) to promote research activities in all countries of the Region.

Finally the Committee noted and endorsed the projects proposed for institution strengthening in Sudan, Egypt and Iran and recommended also that leishmaniasis, which had special features in some countries of the Region (Pakistan, Sudan and Iraq) be included in the programme for WHO support in this Region.

10. The EM/ACMR noted with satisfaction the responsibilities of the Regional Review Committee for ethical review of research projects developed within the Region. It considered that the collaboration and appropriate exchange of information with the WHO Headquarters Secretariat Committee on Research Involving Human Subjects should be further developed in order to formulate suitable codes of ethics concerning experiments involving human subjects in the EMR countries.

11. The EM/ACMR noted with satisfaction the progress reports of three continuing projects:

- (a) research in clinical pharmacology: drug bioavailability,
- (b) research on streptococci as related to rheumatic heart disease,
- (c) studies regarding the development of a national evaluation system for the vaccination programme in Egypt,

and considered them of great importance in the promotion of biomedical research and delivery of health care in the Region.

It recommended that these projects be further supported, that institutions with the potential to carry out similar projects in other countries of the Region, such as Tunisia, be identified and strengthened, and that suitable links, co-operation and co-ordination among these institutes should be established.

ADDITIONAL RECOMMENDATIONS

1. Laboratory animals

The EM/ACMR appreciated the great importance of adequate supplies of experimental animals for biomedical research and other medical work, and the unsatisfactory position of such supplies, including certain species of primates, in most countries of the Region.

It recommended therefore that WHO EMRO assist countries to improve the situation by the training of professionals and technicians, the development of management practices suitable to the Region, promoting exchange of information, and assisting in obtaining breeding nuclei, in setting up at least one model breeding colony in each country, and possibly in establishing a Regional Centre.

The Committee noted further that primates required special attention and their breeding required considerable initial capital outlay. Free-ranging breeding colonies could possibly be set up at less cost in countries where they occurred naturally.

2. Appropriate technology for health

The EM/ACMR was informed about the programme on this subject initiated in 1977 (EM/WKGR.ATH/5) and recommended that the following activities be included in the expanded research in the programme:

- (a) development of appropriate technology in environmental health (primary health care) in rural areas;
- (b) appropriate technology for the control of trachoma and other communicable eye diseases, and the prevention of blindness, within the overall programme to be developed by the advisory group set up for this purpose as recommended by the Regional Committee.

3. Liver diseases research

The EM/ACMR recommended that research studies should be supported and promoted on those diseases which were identified as major health problems at its First Meeting and in which research had until now been carried out in the Member Countries with their own resources.

It considered that liver disease was one such problem on which considerable work had been carried out in some countries of the Region. The Committee recommended that the Regional Office consider at an appropriate time establishing a Liver Research Study Group, to promote and co-ordinate research work on liver diseases.

4. Technical staff

The Committee stressed the important role of qualified technical staff in the conduct of research and the need to promote their training. It recalled its recommendation concerning the research manpower situation at its Second Meeting and recommended that this problem should receive special attention by WHO EMRO.

5. EM/ACMR representation at Regional Committee Meetings

The Committee appreciated the intent of the Regional Director to arrange for its representation at the meetings of the EM Regional Committee in order to explain the research policies recommended by EM/ACMR and to answer questions; it recommended that the Chairman fulfil this task.

ANNEX I

LIST OF PARTICIPANTS:

Committee Members

Dr M. Abdussalam (Rapporteur)
Director
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(Robert von Ostertag Institut)
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Former Secretary of Health
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Pakistan Secretariat
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Dr Farhan Bakir¹
Professor of Medicine
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Dr El-Sayed H. Daoud (Vice-Chairman)
Director General of the National
Public Health Laboratory Services
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Dr M.E. El Kharadly (Vice-Chairman)
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¹ Was unable to attend

Committee Members (Cont'd)

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Reza Shah Kabir University
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Dr G. Motamedi¹
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Dr N. Mourali
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Resource Experts

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Chairman
Advisory Committee on Medical
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Geneva

Brigadier M.I. Burney
Director
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Islamabad

Dr Abdel Wahab El Borolossy
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National Organization for Drug
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Cairo

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Pakistan Medical Research Council
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¹Was unable to attend

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Vice-Dean
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Observer Dr M.L. Dowidar¹
Professor of Surgery
Faculty of Medicine
University of Alexandria
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WHO SECRETARIAT

Dr A.H. Taba	Director	Eastern Mediterranean Regional Office, Alexandria
Dr M.O. Shoib	Director of Health Services, Secretary of the Meeting	Eastern Mediterranean Regional Office, Alexandria
Dr S. Hassan	Public Health Administrator, Community Health	Eastern Mediterranean Regional Office, Alexandria
Dr A. Robertson	Public Health Administrator, Health Manpower Development	Eastern Mediterranean Regional Office, Alexandria
Dr G. Rifka	Public Health Administrator, Health Organization	Eastern Mediterranean Regional Office, Alexandria
Dr J. Barzelatto	Medical Officer, Training and Institu- tion Strengthening, TDR	WHO Headquarters, Geneva
Dr J.P. Dunne	Secretary, Secretariat Committee on Research Involving Human Subjects (BCRIHS), PHA	WHO Headquarters, Geneva
Dr E. Hammoud	Regional Adviser on Health Statistics	Eastern Mediterranean Regional Office, Alexandria

¹Attended on 28/3

Dr R. Cook	Regional Adviser on Nutrition and MCH	Eastern Mediterranean Regional Office, Alexandria
Dr P. Mansourian	Secretary, Research Development Committee	WHO Headquarters, Geneva
Dr A. Rossi-Espagnet	Medical Officer, Strengthening of Health Services, HSI	WHO Headquarters, Geneva
Dr A. Ahmed	WHO Consultant	Eastern Mediterranean Regional Office, Alexandria
Dr S. Cole-King	WHO Consultant	Eastern Mediterranean Regional Office, Alexandria
Mr K.P.H. Milner	WHO Pharmacist	Institute of Health Manpower Development, Aden (Phase II)
Mrs C. Cartoudis-Démétrio	Conference Officer	Eastern Mediterranean Regional Office, Alexandria
Mr M. Brunet	Translator	Eastern Mediterranean Regional Office, Alexandria
Mrs C. Pútnóky	Secretary	Eastern Mediterranean Regional Office, Alexandria

ANNEX II

AGENDA

1. Opening of the Meeting
2. Election of Officers
(Chairman, Vice-Chairman and Rapporteur)
3. Regional Research Resources and Potentials
 - (a) Report of the Visiting Team to Tunisia and Syria
 - (b) Progress Report on Profiles of Regional Research Institutions
4. Review of the Report of the Nineteenth Session of the Advisory Committee on Medical Research, Geneva, 13-17 June 1977
5. Health Services Research
 - (a) Report of the Scientific Group on Health Services Research, 1-2 August 1977
 - (b) Report of the Working Group on Social and Behavioural Sciences in Health Services and Manpower Development, 25-29 July 1977
 - (c) Orientation Course in Health Services Research
 - (d) Challenge to Effective Health Coverage - A Comparative Health Study
 - (e) Research on Effectiveness of Alternative Approaches to Rehydration
 - (f) Drug Utilisation Studies
6. Biomedical Communications
 - (a) Status of Biomedical Communications in the Eastern Mediterranean Region
 - (b) Recent Developments in Biomedical Information Systems
7. Ethical Aspects of Biomedical Research
8. Progress Report on Research Activities currently being carried out with WHO Collaboration or Support
 - (a) Research in Clinical Pharmacology
 - (b) Research on Streptococci as related to Rheumatic Heart Disease
 - (c) Studies regarding the Development of a National Evaluation System for the Vaccination Programme in Egypt (Jacques Parisot Fellowship)
9. Special Programme for Research and Training in Tropical Diseases - Report of the First Meeting of the Research Strengthening Group, Geneva, 24-28 October 1977
10. Conclusions and Recommendations
11. Adoption of the Report

ANNEX III

LIST OF WORKING PAPERS

1. REPORT OF THE VISITING TEAM TO TUNISIA AND SYRIA
by Professors E. Aujaleu and L. Dowidar EM/3RD.MTG.ACMR/3
2. PROGRESS REPORT ON PROFILES OF REGIONAL RESEARCH
INSTITUTIONS
by Dr E. Hammoud EM/3RD.MTG.ACMR/4
3. REVIEW OF THE REPORT OF THE 19TH SESSION OF THE
ADVISORY COMMITTEE ON MEDICAL RESEARCH
by Dr S. Bergström EM/3RD.MTG.ACMR/5
4. ORIENTATION COURSE IN HEALTH SERVICES RESEARCH
by Dr W. Hassouna EM/3RD.MTG.ACMR/6
5. CHALLENGE TO EFFECTIVE HEALTH COVERAGE -
A COMPARATIVE HEALTH STUDY
by Dr W. Hassouna EM/3RD.MTG.ACMR/7
6. RESEARCH ON EFFECTIVENESS OF ALTERNATIVE
APPROACHES TO REHYDRATION
by Dr R. Cook EM/3RD.MTG.ACMR/8
7. DRUG UTILIZATION STUDIES
by Mr W.F.H. Milner EM/3RD.MTG.ACMR/9
8. WHO REGIONAL LIBRARY OF MEDICINE FOR THE EASTERN
MEDITERRANEAN REGION
by Dr A. Robertson EM/3RD.MTG.ACMR/10
9. RECENT DEVELOPMENTS IN BIOMEDICAL INFORMATION
SYSTEMS
by Dr A.H. Sami EM/3RD.MTG.ACMR/11
10. ETHICAL ASPECTS OF BIOMEDICAL RESEARCH
by Dr J.F. Dunne EM/3RD.MTG.ACMR/12
11. RESEARCH IN CLINICAL PHARMACOLOGY
by Dr T. Fakouhi EM/3RD.MTG.ACMR/13
12. RESEARCH IN STREPTOCOCCI AS RELATED TO
RHEUMATIC HEART DISEASE
by Dr A. El Kholy EM/3RD.MTG.ACMR/14
13. STUDIES REGARDING THE DEVELOPMENT OF A
NATIONAL EVALUATION SYSTEM FOR THE VACCINATION
PROGRAMME IN EGYPT (Jacques Parisot fellowship)
by Dr M.H. Wahdan EM/3RD.MTG.ACMR/15

ANNEX IV

ADDRESS BY DR A.H. TABA
DIRECTOR
WHO EASTERN MEDITERRANEAN REGION
AT THE
THIRD MEETING OF THE EM ADVISORY COMMITTEE
ON BIOMEDICAL RESEARCH
ALEXANDRIA, 27-31 MARCH 1978

Dear Colleagues,

This annual meeting of the Regional Advisory Committee on Biomedical Research, to which I welcome you most cordially, has become a significant annual event in the work of our Region.

As in previous years, I would like to say how grateful I am to those of you who have given your time to working with us here, as well as for the work which many of you have done in other ways in helping us to develop our Regional Research Programme since the Committee last met in April 1977.

In welcoming you, I take pleasure in saying that I believe that now, at the time of the Third Meeting of the Committee, we have, as it were, reached the "end of the beginning". In our first meeting, we began from scratch to think through and conceptualize how the Regional Office could develop a cohesive research programme. Some research activities have, of course, always characterized our work, but during the last two years we have been building up towards the point where we can say we have a real and active programme.

I believe the agenda for this meeting, as it unfolds, will show that this is now coming to be true.

* * *

It will come as no surprise to you, and I am sure that you will be in agreement with this, that I have submitted to you this year an agenda in which health services research is, unquestionably, the most prominent subject to be discussed.

At each of its previous two meetings, the RACMR has registered and endorsed the importance of this type of research for our Region. This importance has been underlined by our Regional Committee, more than once, and endorsed very strongly indeed by the recent Ministerial Consultation on Health Services and Manpower Development, in Teheran, in which several of you took part.

As you know, a strong determination was expressed, at that very high-level meeting, on behalf of all countries, to move as rapidly as possible, towards the development of integrated national health services and manpower development mechanisms.

At the Ministerial Consultation, as on previous occasions, the absolute necessity of improving both the effectiveness and the efficiency of the delivery of health services in every country, was underlined.

It was also made absolutely clear that our member countries simply do not see it possible to improve upon the present situation unless there is much more and much better information on:

- the health needs of the population,
- the characteristics of the existing situation in health services and manpower development, and
- the resources available to develop an effective long-term plan.

Very heavy stress was laid by all those participating at the Consultation, including the Ministers of Health, and several senior Ministers of Education, from almost all our Member countries, and the most distinguished leaders in education, that both the ministries responsible for health and the education and training bodies in our Region should embark on collaborative programmes of health services research.

Much of the activity in the regional research programme since this Committee last met, has been in this direction.

Not least important was the Meeting of the Scientific Group on Health Services Research whose report will be introduced to you by its Chairman, Dr Mofidi, this week.

The Scientific Group, which I convened in August, in accordance with the expression of intent which I made to you last March, took its task very seriously, and I would urge you to read its specific research proposals with care.

At about the same time last year, in July, I had also convened a Working Group on Social and Behavioural Sciences. On several occasions, it has been noted to what extent we, in health and medicine, in this Region and elsewhere, are still not making enough use of these branches of knowledge. A distinguished international group of medical and social scientists prepared a report which will also be presented to you this week. I feel sure that that Meeting, if its recommendations are effectively followed through, will come to be looked upon as a significant marking point in the evolution in this Region of a capacity to undertake effective health services research.

I am pleased to be able to inform you that I have entered into agreements with three institutions, two in the Region, and one outside, in order to secure an improved capability for our work in this subject, which, as you know, from previous reports, is itself shortage of experienced scientists to direct it.

One of these agreements, is with the Bu Ali Sina University in Hamadan, Iran, an institution which is taking a very innovative and imaginative approach, both to the development of health manpower, and to the conduct of local health services. This University, which has also been designated as WHO Collaborating Centre for Research in Health Services and Manpower Development, will provide us with an important laboratory in this subject. We are very grateful to the authorities of the University and to the Government of Iran, for their collaboration, and to Dr Fereydoun Amini, the Vice-Chancellor of the Bu Ali Sina University's Health Cluster. The close historical relationship of his work with that which he earlier did in West Azerbaijan represents an important continuity with the earliest Health Services Research Project which began in the Region some eight years ago.

In Egypt, we are, as this Committee knows, fortunate to have, within the Region, under the leadership of Dr Wafik Hassouna, a very active group of people concerned with

health services research and we also look forward to collaborating intimately with the Institute of National Planning for Egypt, both in the conduct of courses to train future research workers, and in the conduct of specific studies, the first of which will be laid before you this week for your consideration.

Since 1974, the Centre for Health Sciences at the Ben Gurion University of the Negev, Beersheba, Israel, has been developing, as a WHO Collaborating Centre, an integrated approach to health services and manpower development. There, the health services of the Negev Region and the Health Sciences Centre which trains doctors, nurses and other health personnel, are combined under the same authority. This is proving a very valuable experiment which, in collaboration with WHO Headquarters, we are continuously monitoring and evaluating.

As part of the Regional Research Programme, a series of studies on the selection of medical students, and an evaluation of their continuing performances in the specially designed curriculum which exposes them from their earliest days as students to teamwork in the community, are being published. It is anticipated that there will be further health services research work at Beersheba during the coming years.

It is likely, that we shall continue, however, to need to use some training opportunities outside the EMR for the next few years as well as the expertise of a few key scientists. I am pleased to say that we are looking forward to a specially close collaboration with the Health Services Research Group of the University of Nottingham, England, from where Professor E.M. Backett and Dr J. McEwan have already substantially assisted us during the past year. While they will accept some of our young scholars for training overseas, their services will also be available within our own member countries from time to time as required.

* * *

Of course, not all the research with which WHO has been, is, and will continue to be, collaborating in the Region, is applied research in health services.

Important on-going activities in, for example, clinical pharmacology, rheumatic heart disease, and into the development of vaccination and other immunization programmes, are amongst the areas in which work has been going on with WHO collaboration during the past year. Reports on these subjects will also be put before you this week.

I should also like to draw your attention to the further study of activities and potentials in Research in countries of the Region, which took place in the Syrian Arab Republic and Tunisia, as a follow-up of previous studies in Egypt, Iran, Iraq, and Pakistan, carried out last year. The report will be presented to you by Dr Dowidar this week.

As all of us would agree, one of the fundamental underlying features of an effective research programme, must be an effective biomedical information system. Likewise, without good library services any scholar is lost.

As you already know, we designated, some time ago, the Pahlavi Medical Library of the Imperial Medical Centre of Iran, as the WHO Regional Medical Library. The activities of this impressive institution, only the second of its kind in the world, have been getting under way in recent months, and I especially welcome the presence here this week of Dr Samii, Director of the Centre, who will open what, I am sure, you will find

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WHO EMRO

an informative and profitable discussion on the services available from the WHO Regional Library, and on recent developments in biomedical information systems.

Once again, I should like to thank you very much indeed for giving us the benefit of your time and energy. I look forward to your critical examination of the reports which are submitted to you, and to your wise advice and guidance.

ANNEX V

SUMMARY OF REPORT ON ACTIVITIES AND POSSIBILITIES
IN THE FIELD OF BIOMEDICAL AND
PUBLIC HEALTH RESEARCH IN TUNISIA AND SYRIAN ARAB REPUBLIC
22 JANUARY TO 15 FEBRUARY 1978

BY
PROFESSOR E. AUJALEU
AND
PROFESSOR M.L. DOWIDAR
WHO CONSULTANTS

The general conclusions on the visit to the two countries are reproduced below.

Tunisia

1. Tunisia has not drawn up any medical research policy and there is no properly developed research organisation. Nevertheless, it should be possible, even without creating a formal research structure, to establish, under the auspices of the Ministry of Health and in co-operation with the Ministry of National Education, a Tunisian Advisory Committee on Medical Research.

Initially, this committee should strive:

- to define the main research objectives and priorities on the basis of the country's needs and resources;
- to co-ordinate the research in progress in the faculties and institutes;
- to help the Government to direct into the proper channels any assistance obtained from the national budget or from external sources.

2. There has as yet been little development of medical research in Tunisia.

There are two reasons for this:

- The faculties of medicine have been established only recently. The high number of medical students, in accordance with the wish of the Government to overcome rapidly the shortage of Tunisian doctors, requires a much larger teaching staff than is available. The teaching staff is occupied entirely in teaching and in performing the hospital duties which it undertakes simultaneously and has no time to devote to research. The most urgent needs are being dealt with first, and the situation can be changed only gradually.
- Tunisian doctors prefer clinical work and are not inclined to study basic medical sciences, particularly biology. Measures concerning resident posts ("résidanat"), and the probable increase in the number of pharmacists in a few years, may lead to a large supply of biologists. WHO fellowships could accelerate this development.

3. Medical research is, however, being carried out in Tunisia, thanks to one feature of its organization, i.e. the existence of several specialized institutes under the authority of the Ministry of Public Health. In general, these institutes are well equipped. Most have undertaken good research work. The effort of WHO for the present should be concentrated on these institutes.
4. The research in progress or projected has been indicated in this report. Generally speaking it is concerned mainly with epidemiology, clinical medicine and, to a lesser degree, laboratory work. There is no experimental research nor any real research in public health.
5. The lack of possible future research workers applies above all to epidemiologists and biologists. Among biologists it is virologists and geneticists that are particularly lacking. Requests for fellowships in these specialities should be given priority.
6. Unlike what has been found in many countries in the Region, there is no difficulty in Tunisia in recruiting and keeping high-grade technicians.
7. As a result of arrangements with the firms that have supplied medical and laboratory equipment, there are practically no maintenance problems.
8. Medical research in Tunisia is assisted under bilateral co-operation with France and by grants from the United States (universities and PL 480).
9. Any assistance that WHO could give for research would be particularly valuable in the following fields:

fellowships for further training, missions of experts to train Tunisian specialists, assuming responsibility for paying certain types of staff needed for the practical aspects of surveys, supplying various items of apparatus and laboratory equipment, providing some equipment (on a small scale), and supplying vehicles for transporting field teams.

Syrian Arab Republic

1. Syria has not laid down any medical research policy and there is no central organization of medical research. However, it is suggested that the Ministry of Health and the Ministry of Education establish jointly a national advisory committee on medical research. Initially, the tasks of this committee would be:
 - to define the main objectives and research priorities in the light of the country's resources;
 - to encourage research activities within the faculties of medicine;
 - to assist the Government to make the best use of any assistance that may come from the national budget or foreign agencies.
2. In the absence of institutes or similar agencies under the Ministry of Health, only the medical faculties and their associated university hospitals, which have no institutional link with the Ministry of Health, in principle have a research function. The Ministry of Health is therefore not in touch with research problems.

3. There is no biomedical research work in Syria, apart from a few studies by the Nuclear Medicine Centre and the Medical Biology Laboratory of the Damascus Faculty of Medicine.

Moreover, there is no research on the organization of public health services.

4. This situation, which is nation-wide, cannot be explained by the youth of the medical faculties because the Damascus Faculty has been in operation for almost sixty years. The lack of research work seems to be connected with the following factors:

- the severe shortage of teaching staff in relation to the number of students, particularly in the basic sciences;
- the opportunities so far given to the teaching staff to continue in private practice in towns (this is now stopped for newly recruited staff);
- an obvious lack of inclination to carry out research on the part of many teaching staff, who find the present situation very convenient;
- a shortage of qualified technicians;
- some difficulties arising out of the use of Arabic in teaching, which restricts contacts with other countries.

5. A considerable and successful effort has been made to provide the medical faculties with suitable modern and spacious buildings. On the whole, laboratory equipment is adequate and of good quality. Reagents and laboratory supplies are available.

6. As in many countries with little industrial development, it is difficult to maintain complex apparatus, particularly as it has been supplied by many different companies.

7. In short, the material facilities necessary for research are available; what is missing is the staff and perhaps also the determination to overcome the present difficulties.

8. Epidemiological research projects on disease in Syria, which presents many unknown factors, would at present be the most profitable, the easiest to carry out, and the most rewarding for prospective research workers.

9. The development of biomedical research in Syria is subject to the recruitment, motivation and training for research of staff at all levels: teachers, assistants and technicians.

It is within this context that WHO could most effectively contribute to future biomedical research in Syria.