

**Status of health research for developemnt
in the Sultanate of Oman**

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1. Major developments in health research in the last decade

1.1 Formulation or reformulation of health research policy

A national workshop on health research policy and strategy was conducted in Muscat, in collaboration with WHO. The workshop, which was cross-sectoral and interdisciplinary, was attended by a good mix of senior decision-makers, directors from different regions, members of the planning department of the Ministry of Health (MOH), programme managers, academicians and clinicians from the MOH institutes and hospitals, as well as from the College of Medicine of the Sultan Qaboos University.

The objectives of the workshop were as follow:

- to understand the nature, scope and use of health system research (HSR), including epidemiological research;
- to identify and prioritize national research policy needs and strategies for the development of HSR in Oman;
- to identify and prioritize the topics for research in Oman.

Participants were divided into groups to identify and prioritize policies and strategies, as well as topics for health research. Many factors were taken into consideration while formulating the policies and strategies including population size, socio-economic status of the country, literacy, changes in health environment and changes in morbidity and mortality. The official health policy and the Fifth Health Development Plan (1996-2000), which includes health problems and the goals and objectives to be achieved, were made available to the participants and were the basis on which the health research policy and priorities were developed.

The WHO consultant suggested guidelines for the formulation of a national health research policy and strategy. These guidelines, along with the group work output and recommendations, were used by the Department of Research of the MOH to write the policy for research, which was revised by the authorities and endorsed.

1.2 Development of infrastructure for health research

The Department of Research and Studies was created in 1991 under the Directorate General for Planning. The Department includes four sections: health system research, epidemiology, clinical research and health survey. The Department acts as a national focal point for research. It has established its own library for the use of researchers and collects all studies and research accomplished outside the department to form a database for research in the MOH. The main sources for literature are the main hospital libraries in each region, institutes of health sciences, the Sultan Qaboos University main library and the College of Medicine library. Internet facilities and CD-Roms for literature search are available free of charge. Computers and software packages are available.

The medical laboratories of the main hospitals, public health laboratories, and institutes of health sciences, as well as other laboratories in relevant ministries are well equipped and well suited for biomedical research. The availability of national research capacity is one of the problems facing the MOH. Omani and non-Omani research-oriented staff, with high academic degrees, are available but experience and time are limited.

There is no local graduate programme in medicine or specific to research. The MOH sends a few candidates for Master's degree courses in biostatistics and for short courses in research.

1.3 Funding trends

Before the 1990s major efforts had been devoted to the construction of a health care system to deliver services to different locations, including remote areas. International organizations and the MOH carried out limited surveys to investigate particular health problems. The tremendous improvements in health indicators in the late 80s shed light on the importance of monitoring and evaluation, as well as introducing modern concepts, such as quality assurance, cost containment, better utilization of resources and maintaining the standard of health programmes. All of these normally need research in the early stages. Top officials in the MOH recognize health research as a tool to provide managers with adequate information for decision making. All the previous factors explain the limited contribution of international agencies and the MOH to health research in the 1980s. Funds for research increased gradually during the 1990s. However, there is no specific budget for research at the MOH, which conducts surveys, within available resources, on transport, workers, stationery, etc.. The international agencies fund research through joint programmes. Generally, funding for health research has increased in the course of the decade. The Sultan Qaboos University allocates funds for research and all departments submit proposals to compete for funds.

2. Contact address of most productive health research centres

The only two bodies which produce health research are the MOH and the Sultan Qaboos University.

- Ministry of Health
Department of Research and Studies
P.O Box 393 postal code 113 Muscat
- Sultan Qaboos University
College of Medicine
P.O Box 35 AL-Khod

3. Stakeholders during the past decade

World Health Organization; UNICEF.

4. Prioritization of health problems

Who and what is driving the national health research agenda?

The donors and programme managers to some extent.

The Sultanate of Oman embarked on preparations for the Five-Year Health Development Plan beginning in 1976. Since then 5 five-year plans have been implemented. The first four had specific programmes each directed to the reduction of a priority health problem. The fifth plan of 1996-2000 was the first plan that resulted from the intensive efforts of a select group of staff of the MOH to carry out a health situation analysis in the Sultanate, covering demographic, social, economic and epidemiological aspects. They identified the priority concerns, their precursors and consequences. In their work, the group followed the WHO managerial process for national health development. The documents for the 5th and 6th five-year plans (1996-2000 and 2001-2005) turned out to be comprehensive presentations of the priority problems, the problem reduction objectives, strategies and programmes to achieve these objectives.

During the formulation of the fifth and sixth five-year plans, three workshops were organized by the MOH, which were attended by different groups of health personnel, including senior managers, health programme managers, public health workers, clinicians, nurses, pharmacists, etc. from institutions in all regions. The workshops focused on the following:

- The first workshop reviewed the previous 5-year plan achievements, difficulties, constraints and the lessons learnt.
- The second concentrated on the health situation analysis and prioritizing of health problems in the Sultanate, using preset indicators for the following aspects: magnitude of the problem - health, social and economic impact – vulnerability - cost of solving the problem.
- The third developed the national programme and strategies that would reduce the identified priority health problems.

The organization of these workshops was effected by a central task force under the supervision of the Under Secretary for Planning Affairs and the Steering Committee for Planning.

4.1 Top ten health problems for the 6th Five-year Plan (2001-2005)

- Protein energy malnutrition (PEM under 5 years)
- Blindness and eye diseases
- Anemia among pregnant women and adolescents
- Accidents/ injuries
- Tuberculosis
- Diseases of heart and circulation
- Malignant tumors
- Viral hepatitis A, B and others
- Diabetes
- AIDS and STDs

5. Is health research being given priority by the Government?

Yes. Health research ranked as one of the country's research and development priorities in the sixth five year plan. Health research is on of the aagenda of the Sultan Qaboos University. The programme to strengthen health research is one of the MOH's priority programmes in the five-year plan.

5.1 Results effect a change in health policy

- Generally, all results of surveys are used as baseline data in the formulation, monitoring and evaluation of the five-year Health Development Plan, as well as in planning and designing health education programmes.
- The high prevalence of PEM, revealed by the results of the Family Health Survey in 1995, changed national health priorities and identified nutrition as one of the top ten health priorities. Accordingly, many actions have been taken by the MOH, including the establishment of the Department of Nutrition to look into the problem, the design of materials for health education of the public, especially women, and the introduction of a diploma course in nutrition at the Public Health Institute.
- The Vitamin A Deficiency Survey among children in 1994 led managers to decide to add vitamin A to the children's vaccination schedule.
- The results of the Iodine Deficiency Survey led the Ministry of Commerce and Industry to switch its import specifications and regulations from table salt to iodized salt.
- The results of the Diabetes Survey persuaded decision-makers to assign one of the hospitals as a WHO collaborating centre.

5.2 Research considered by the Government as a tool for health development

Examples of such resreach are as follows:

- The programme to strengthen health research is one of the programmes in the 6th five-year Health Development Plan of the MOH.

- The existence of the Department of Research and Studies under the Directorate General of Planning, to work in collaboration with other departments for health development in the country.

5.3 Health research as a tool to overcome inequities in health

Before embarking on any investment project to expand health services, a study is conducted to identify the gaps in resource distribution. Depending upon the findings of the study, a decision is taken to make new services available. Whenever survey results indicate a health problem in a certain region or community, the Ministry devotes more attention to that particular place through its health programmes.

6. Set priorities for health research

Research priorities were set in the fifth five-year plan (1996-2000), followed up by the Health Research Policy Workshop. The process of setting research priorities is explained in this report in the section dealing with the formulation of health research policy. WHO criteria and scoring for prioritizing research topics were used during the workshop, including relevance, avoidance of duplication, feasibility, political acceptance, application of results, urgency of data needed and ethical acceptability. Personnel from different health disciplines attended the workshop. After approval of the sixth five-year plan (2001-2005), a similar workshop will be conducted to review research priorities.

6.1 Top ten research priorities for the fifth five-year plan (1996-2000)

- Nutrition (PEM for children under 5-years)
- Anaemia in pregnancy
- Heart diseases and blood pressure
- AIDS
- Cancers
- Road traffic accidents
- Diabetes
- Blindness
- Hepatitis
- Tuberculosis

6.2 Proportion of national health research in direct response to priority health needs

Most of the research conducted at the MOH is in response to the priority health needs, because research done serves the process of monitoring and evaluation of health development plan programmes.

6.3 Efforts to align health R&D with research priorities

Recently His Majesty the Sultan of Oman emphasized the importance of scientific research in improving and solving socio-economic problems. He also stressed the importance of linking scientific research to the development and future vision of the Omani economy. For the first time the Council of Ministers incorporated a research, technology, development and innovation sector in the sixth Five-year Plan for Development (2001-2005).

The blueprint for scientific research in the five-year plan includes clear objectives, research priorities, the role of each sector, policies and mechanisms for scientific research and innovation and the investment programme for scientific research and development. Scientific research to solve the social and health problems of the Omani community is one of the

objectives of the country's scientific research plan. Health research ranked among the country's research priorities.

7. Coordination mechanism for health research

A Committee for Research and Studies has been established by the Minister for Health. Its terms of reference are to review the scientific aspects, the quality and the ethics of studies and research. The Department of Research and Studies is the responsible body and focal point for research at the MOH. Proposed studies are conducted through the Department of Research, where technical assistance is provided at all phases of the research projects. Consultations are also provided for Master's and PhD students from the MOH and from other organizations.

Programme managers and principal researchers suggest projects at the beginning of each five-year plan in their programmes. The projects should be in keeping with research priorities. The programmes are approved and endorsed by the Minister. The projects are incorporated in a country programme, implemented jointly with international organizations to assure part of the funding. The rest of the funds come from available Ministry facilities for personnel, cars and other items. No specific budget is allocated to each project. The Director of Research and the managers cooperate in initiating and coordinating the research project. For each project a task force is set up at the central level. Its main task is to design the research and draw up a plan of action to implement the research activities. The task force meets regularly during the planning, implementation, analysis and report writing phases. At the regional level, a team is formed, consisting of the Director General of Health Services, the Director of Health Affairs, a research coordinator, statistical officer, field workers and other members, depending on the nature of the research. The Director General of Health Services is responsible for the research activities in his region. The Director of Health Affairs in the region ensures that the research is conducted as designed, and provides all the facilities for the research team. The regional research coordinator is responsible for the technical aspects of the project and is in constant contact with the Department of Research and the National Task Force.

Starting with the next plan, the mechanism for research coordination will be changed into clusters of studies grouped under the single umbrella of a major project. The new mechanism should improve coordination and save resources and time.

The first of a series of workshops on the utilization of research findings has been held. The aim is to disseminate the results of research to the managers, researchers, and planners from all over the country and to suggest ways of utilizing the findings in the pursuit of health policy. The participants in the workshop were from different disciplines in the MOH and other health-related organizations, such as education, environment, social affairs, Muscat municipality, Diwan Royal Court, AL-Shura Council and Qaboos University. The working groups discussed and presented their findings on two main issues: what kind of strategies should be followed to ensure dissemination of research findings: and how to utilize research findings for policy implementation and planning. The authorities at the MOH will consider the output of the working groups.

7.1 Strengths and weaknesses of the coordinating mechanisms

7.1.1 Strengths

- The fact that most health research topics are proposed by the programmes, which reflect the country health priorities, has resulted in a high proportion of health research being guided by, and in response to, the priority health needs of the country.

- Research is designed at the central level by professional researchers and experts, which ensures its high quality.
- The creation of a multidisciplinary task force for research projects broadens the scope of the research through inputs from different disciplines.
- The absence of a budgetary allocation for research and estimates of actual expenditures on research each year encourage the Ministry to undertake a considerable amount of research in one year.
- The smooth coordination and relationship between the central and the regional level encourages research.

7.1.2 Weaknesses

- Research topics of importance, such as clinical research and health administration, are not covered by the programmes.
- International organizations, which provide seed money for research, tend to coordinate with the programme managers directly, ignoring the official national focal point for health research.
- Apart from a few of their own studies, the regions act merely as implementers of research activities.
- Staff in the regions are exhausted by the burden of much research work.
- The exact amount of money spent on research is not known.

8. Research networks in the country

As mentioned above, the only two institutions that produce health research are the MOH and the Sultan Qaboos University. They collaborate in several joint research projects, national meetings and conferences. They both participate in many regional networks through multi-centre studies and regional and international research conferences.

9. External collaboration in health research

9.1 Population and health surveys

The MOH conducted two population and health surveys, the Child Health Survey (1988) and the Family Health Survey (1995). Both were carried out as part of the Gulf Health Survey Project in six countries, which is undertaken by the Executive Board of the Council of Health Ministers of the GCC States, in collaboration with the Arab Programme of the United Nations Development Programme, the Arab Fund for Social and Economic Development, the Gulf Cooperation Council, the United Nations Population Fund, the United Nations Children's Fund and the World Health Organization.

9.2 ISAAC

The International Study of Asthma and Allergies in Children (ISAAC) established and promoted standardized methodology, and facilitated international collaboration by involving as many countries as possible, provided they met the requirements of the protocol of the study. Oman was one of the collaborating centres in Phase I of the ISAAC project (1994). After our successful participation in the first phase, we have a unique opportunity to complete the investigation in the remaining phases of this international collaborative project. The main objective of the first phase was to describe the severity of asthma, rhinitis and eczema in children living in different areas to obtain baseline data for future trends. Oman will continue to be a collaborative centre in Phase II of the project which is due to start this year. The role of ISAAC is the preparation of methodology and data analysis, while the role of Oman was to calculate the sample size, training, field work and data entry.

9.3 Multi-centre study of HB e-antigen

A cross-sectional multi-centre study was launched in selected GCC countries in 1999. The objective is to determine the prevalence of hepatitis B e-antigen in pregnant women and of hepatitis B markers in the same population (HbsAg). The study is funded by SmithKline Beecham, which bears all costs of consumables, transportation and training, as well as the cost of analysis of necessary samples. The MOH calculated the sample size and is doing the fieldwork.

9.4 Multi-centre growth reference study

This study aims to construct a growth reference curve for children of 0-5 years by collecting data from 7 sites in different geographical regions, races and cultures, to be used as a standard curve for all countries. Seven centres are collaborating in the study (Norway, USA, Brazil, India, China, Ghana and Oman). Oman is one of the centres that represents the Middle East and the Arab world countries. The World Health Organization provides technical and financial support, such as training of data managers, teams and the preparation of standard protocols. Oman contributes financially by bearing the cost of fieldwork and the preparation of an operations manual.

9.5 Inter Heart study

Oman has joined the International multi-centre study as part of Inter Heart Study. A smoking study will be conducted in Muscat as a multi-centre study. Other collaboration with outside universities, such as Johns Hopkins University, Social Research Center of the American University in Cairo and Harvard in areas of family planning, fertility transition and health transition have existed for the last decade.

Do agencies play an effective role in supporting health research in developing countries? Yes, in terms of financial and technical support.

10. Systematic attempts to strengthen national health research capacity

- The Ministry of Health held a meeting with senior staff of various directorates responsible for the introduction of HSR concepts, its nature, general problems, practical application and the role of World Health Organization and other international agencies.
- The concept of HSR was reintroduced by a WHO consultant during the policy workshop, attended by many managers and policy makers from different disciplines.
- HSR and its application were explained in detail to the managers during the research methodology workshop.

10.1 National research methodology workshop (1997)

The workshop ran for 10 days, with the main objective of training programme managers and other doctors from all health service regions in the scientific steps of research methodology, including identification, statement, analysis of the problem, objectives, sampling, data collection methods, budget, and plan of work. The participants were also expected to develop a step by step research project proposal on a priority topic during plenary sessions and group work. The process helps each group to refine its proposal through critique from the facilitator and other participants. The following research areas, prioritized at the earlier workshop on research strategy and policy, were given to each group: nutrition, reproductive health, non-communicable diseases and STD/AIDS.

10.2 Workshop on reproductive health research (1998)

The workshop on reproductive health was one of the steps towards creating a culture of research in maternal and child health (MCH) by developing basic skills in research methods. Participants were managers, MCH coordinators and doctors from all health services in the regions of the country. The programme was equally divided between theoretical instruction and practical hands-on experience. The process will be further advanced by developing study protocols and setting priorities for research activity in the regions. Participants who take an active interest in collaborative research may be brought back in a year's time for further training in advanced research methodology.

10.3 Workshop on introduction to research in medical laboratory science

This workshop adopted the same approach as the research methodology workshop and was targeted at graduates of the Institute of Health Sciences, as part of the programme of continuing education.

10.4 Symposium on research methodology

The symposium was aimed at different staff working in the College of Medicine, but the objectives and methodology were very similar to the previous workshops.

10.5 Short courses and graduate studies

A few short courses and a Master's degree are offered for overseas Omani nationals at the Nuffield Institute for Health Service Studies at Leeds University, the London School of Hygiene and Tropical Medicine, the Social Research Center of the American University in Egypt, Cairo, and the Demographic Centre and Institute of Statistics at Cairo University.

10.6 How health research capacity can be strengthened at the individual, institutional and national levels

- Establish an official body/council responsible for all research in the country, including health research.
- Set health research policies and priorities that correspond to health problem priorities.
- Assure annual funding for certain projects.
- Create mechanisms for coordination with other institutes.
- Appoint national core researchers on a full-time basis.
- Strengthen national capacity through proper local training.
- Offer Master's and doctorate degrees in biostatistics, sampling and research design.
- Collaborate with international research centres and universities.
- Provide proper facilities for research: laboratories, computers, Internet, software etc.
- Ensure proper incentives for researchers.
- Align research with national development.
- Make proper documentation and a strong database available for health research.
- Disseminate effectively research findings through user-friendly materials for managers and policy makers.
- Utilize research findings for policy implementation.
- Encourage and involve the private sector.
- Involve donors and stakeholders from the outset.
- Ensure collaboration between the university and MOH.
- Participate in regional and international research meetings.

11. Major constraints to further development of health research

11.1 Lack of a budgetary allocation for health research

One of the solutions is to allocate at least 1% of the country's income for research and 1-2% of the MOH budget for health research. Research and development should be linked to investment in order to attract the private sector and industry towards research.

11.2 Lack of research policies and priorities

Countries can overcome this problem by setting health priorities and research priorities.

11.3 Lack of trained researchers

Core researchers should be appointed and training in research methodology should be provided through local workshops. There must be training of trainers, short courses, Master's and doctorate programmes and in-the-field training.

11.4 Lack of adequate planning

The absence of research programmes with detailed strategies, activities and a plan of action can be remedied by inviting donors and health workers to formulate a proper plan for research.

11.5 Coordination mechanisms

There is a lack of proper mechanisms for coordinating within and between institutions and between ministries and universities. The role of each party and organization should be clearly identified.