

Health research for development in Mauritius

– an historical perspective

1. Background

Mauritius is one of the 15 countries selected to participate in the African Consultative Process in preparation for the Bangkok Conference. This report describes the evolution of health research in the country and gives an account of latest developments in that field.

The Republic of Mauritius consists of a group of islands, made up of the main Island of Mauritius and the Islands of Rodrigues, St Brandon, Agalega and Chagos. Mauritius is situated in the South East Indian Ocean, 800 km off the east coast of Madagascar and covers an area of 1,865 kms². It has a population of 1.2 million, comprised of Indo-Mauritians (66%), and the general population, that is people of mixed European and African origin (31%), as well as Sino-Mauritians (3%).

Over the last twenty years, Mauritius has undergone major structural change from an agricultural, single-crop economy with rapid population growth, high unemployment and low per capita income to a situation characterized by a fairly stable population, almost full employment and a diversifying economy. There are new sources of income from the export manufacturing sector, tourism and financial and business services.

Concurrently, the health status of the Mauritian population has enjoyed sustained and significant improvements. It has witnessed an epidemiological transition, as the main causes of morbidity and mortality have shifted from infections to chronic and degenerative diseases. Some main health indicators for the year 1998 are given in Table 1, together with the corresponding figures for 1990 for comparison purposes:

Table 1

		1990	1998
1.	Life expectancy at birth: Male	65.6	66.6yrs
	Female	73.4	74.4yrs
2.	Total fertility rate	2.28	1.96
3.	Infant Mortality Rate/1000 live births	19.9	19.4
4.	Maternal deaths/1000 live births	0.7	0.21
5.	Immunization coverage: DPT/Polio 3 ^d dose (those performed in the public sector only)	85%	90%
6.	Deaths due to diseases of circulatory system (% of total deaths)	41.4%	48.9%
7.	Deaths due to infective and parasitic diseases	2.4%	1.3%
8.	Cases of AIDS reported annually	1	1
9.	Total number of AIDS cases notified since 1987	-	44
10.	Population:doctor ratio	1,150	1,130 inhabitants/ doctor
11.	Population: bed ratio	325	306 inhabitants/ bed

Public health care services are provided free of charge to the population. Mauritius is divided into 5 health regions, each with a catchment population of about 200,000 inhabitants. Each health region has its regional referral hospital with a network of health centres, which provides primary health care service. The public health system on the Island of Mauritius, in addition to the 5 regional hospitals, comprises 3 district, 1 psychiatric and 5 specialized hospitals (with a total of 3,699 beds). Outpatient services are also delivered in one community hospital, 2 mediclinics, 23 area health centres and 108 community health centres. The Island of Rodrigues has one regional hospital, 2 area health centres and 11 community health centres.

In the private sector, at the end of 1998, there were 12 nursing homes (private clinics) with a total of 471 beds, 448 medical practitioners - i.e. 45% of all doctors -, 106 dentists and 198 pharmacists.

2. The Mauritius Institute of Health (MIH)

From independence in 1968 to the late 1980's, health research was carried out mainly by the Ministry of Health with the aim of providing the necessary knowledge and insights to facilitate health programmes. The lack of such knowledge often imposed severe constraints on improving the way programmes were formulated. In those days, whatever research was done, was scanty and geared particularly towards communicable diseases and fertility control. Financial input was mainly from overseas.

The commitment of Mauritius to the 'Health for All by the Year 2000' strategy, using primary health care as the key approach, dictated the orientation of research to be developed and promoted at the national level. In 1988, with WHO support, a Health Systems Research Unit emerged within the Ministry of Health. In 1989 the Government set up the Mauritius Institute of Health (MIH), a parastatal body under the umbrella of the Ministry of Health. Since one of the main activities of the MIH was to carry out Health Systems Research, the HSR Unit previously created was taken over by the MIH. As it was felt that there was a lack of research culture at that time, and that research-based policy makers and health managers were sensitized to the need and value of research, efforts were concentrated towards building up of a critical mass of researchers in the country.

At the time of its inception, the MIH research unit was manned by a director, a coordinator and three research assistants. In 1992, three research officers were recruited to reinforce the staff. However, many of them have since left and at present the Unit is staffed by just two Research Officers. An epidemiologist, who was a French 'aid worker' provided technical assistance to the unit until very recently. It has the necessary administrative staff, office equipment, library with computers and internet access, and transport facilities.

3. Activities of MIH

The MIH research unit has been mainly conducting Health Systems Research, evaluation and epidemiological studies that contribute to improving the health of the community. They operate by seeking answers to a variety of pertinent questions relating to health manpower development, planning of health services, functioning of the health care system, disease profiles, outputs of health programmes. The study topics can be grouped as follows:

3.1 Patterns of health and disease in the population.

- Patterns of mortality and morbidity in various groups – infants, children, pregnant women, the elderly, etc;
- Prevalence of common diseases;
- Common cancers in the population.

3.2 Determinants and risk factors

- The effects of environmental, economic, social and behavioural factors on the incidence, prevalence and severity of specific diseases;
- The important risk factors in the occurrence of major health problems in the community.

3.3 Operation and utilization of health services

- Structure and organization of the health care system;
- Production and distribution of health resources;
- Relationship between the health system and the community;
- The delivery of health services.

3.4 Quality of health care

- Degree to which priority problems are tackled;
- Compliance with professional standards;
- Consumer satisfaction.

Analysis of the studies completed at the MIH over the last 5 - 6 years shows the following figures for the number of studies carried out on specific topics:

Maternal and child health	=	5
Reproductive health	=	6
Health services	=	4
Infectious diseases	=	2
Non-communicable diseases	=	2
Others (use of pesticides)	=	1

The MIH also plays a key role in capacity development at the regional level. Since 1995, it has conducted the Regional Course in Public Health, with the support of Bordeaux 2 University, France. It is a programme intended for district medical officers from countries in the Indian Ocean and the African continent. It is mainly research-oriented and offers participants training in epidemiology, biostatistics and research methodology. They also have to undertake research and present their findings. In 1999 the course was replaced by an

international course in epidemiology. A number of local health personnel have also followed the learning-by-doing training course in health systems research.

The MIH research unit also provides supportive skills to researchers in the health sector to encourage research activities in clinical fields. This consists of bibliographical searches, advice on research methodology and operational support for research work.

4. SSR Centre for Medical Studies and Research

The SSR Centre was established in 1989 by the University of Mauritius to promote medical research. Its main goals are:

- to conduct research on relevant medical/biomedical problems;
- to develop Research and Development in collaboration with industry, and modules for the effective utilization of the Centre's research findings for the benefit of the community.

At present the SSR Centre is staffed by 5 scientists (4 medical and 1 basic scientist) and 6 technicians. Research at the SSR Centre has been mainly on four major health problems in the country, namely:

- Cardiovascular disorders, including hypertension and eclampsia;
- Diabetes;
- Asthma; and
- Haemoglobinopathies.

5. Other departments/organizations conducting health research

5.1 Central Health Laboratory of the Ministry of Health

The different sections of the Central Laboratory also conduct laboratory research. For example, the Biochemistry Section was working on nutritional aspects of diabetes and hypertension. The biochemical profile in type II diabetes is another important research area. The Microbiology Section was collecting epidemiological data on bacterial meningitis to obtain baseline data for the introduction of the highly effective HIB vaccine in Mauritius. It also collaborates with SSR Centre in a few projects, especially in the field of tumor markers. The Virology Laboratory has contributed a lot since 1987, particularly since the advent of HIV.

5.2 Department of Medical and Health Sciences of the University of Mauritius

The Department, which services the teaching of medical and health sciences at the University of Mauritius (B.Sc. Medical Sciences, Diploma in Medical Laboratory Technology, Diploma in Sanitary Science), has an academic staff that devotes some of its time to research. Their main ongoing projects are:

- Epidemiology of hepatitis B;
- Pharmacokinetics of TAME – Esterase;
- Environmental pollution and impact on health and quality of life.

5.3 Mauritius Family Planning Organization (MFPO)

The MFPO allocates 5% of its budget to research in the field of sexual and reproductive health. It has 3 academic staff (1 scientist, 1 clinician and 1 economist), who devote 20% of their time to research. In the past, research was mainly carried out on adolescent sexuality, abortion and quality and care of services. The ongoing research projects are mainly on menopause and youth sexuality.

5.4 The Mauritius Research Council (MRC)

The MRC was established in 1992 as a top-level body to promote, coordinate and fund research and development in all spheres of scientific, technological, social and economic activity at the national level. In this context it has designed a number of research grant schemes to cater for the research needs of the country. In the last four years, the MRC has received a total of 145 proposals for research projects, of which only 57 were funded. The total number of medically oriented projects submitted to the MRC were only 15 (11%), of which 6 (40%) were funded to the tune of Rs 4.6 million i.e. 20% of a total funding of Rs 23 million. In other words, medical projects received relatively better funding than others.

At present the MRC is engaged in the elaboration of a national Research Strategic Plan, which will focus attention on national and regional needs, and stimulate demand for research.

6. Progress achieved in health research for development

6.1 Promotion and advocacy of research

Research awareness is high among researchers and donor agencies. A research culture has gradually improved among policy makers, health service providers, NGOs and the communities. However, there is still much advocacy to be done. For example, policy

formulation based on research is low. Public awareness of the importance of, and participation in, research is rather vague.

The concept of Essential National Health Research (ENHR) must be further promoted. The ENHR process should involve all stakeholders and organizations/departments conducting health research.

6.2 Identification of research needs and priority setting

In 1993, for the first time, a Joint Consultative Meeting (MOH, MIH, WHO, UNFPA, UNICEF, University of Mauritius) was held at the MIH. It aimed to identify the need for research in the various health sectors. The joint meeting lived up to expectations, as no less than 64 topics emerged at the end of the session.

In 1998, the SSR Centre organized a one-day seminar on 'Perspectives and Priorities in Medical Research in Mauritius'. More than a dozen topics were identified during the session attended by the Ministry of Health, the MIH and the University of Mauritius.

However, such priority setting processes have not been regular and systematic, and not all stakeholders were involved in the formulation of a research agenda. Long-term, broad-based, ongoing mechanisms need to be set up.

6.3 Utilization of research results

In 1993, a peer review by the WHO Joint HSR Project in selected countries, including Mauritius, revealed that only 40% of research recommendations were implemented. The situation is still the same and even less favorable in other institutions, like the University of Mauritius, where research is more academic. Therefore, there is a need to steer the research agenda towards greater public health relevance and to take other initiatives to improve the chances of translating research results into action.

6.4 Funding of Research

So far research conducted at the MIH has been mostly funded by external donor agencies. The contribution of the Government comes in the form of the payment of researchers' salaries and those of their supporting staff. However, the SSR Centre is entirely funded by the Government (Ministry of Education). The MRC has, in past years, funded medical projects. There is at present no budget line for research activities in the national health budget. National authorities must, therefore, make a firmer commitment to support essential national health research and make greater budgetary provisions.

6.5 Capacity Building

Some 50 people from different categories of the health sector have been fully trained in HSR. In addition, a group of about 100 doctors serving in the public sector have been trained in epidemiology and public health at the MIH. As of last year, an international course in epidemiology was introduced at the MIH.

Permanent research staff have attended short-term training courses. However, it is felt that research manpower must be strengthened and taught the skills needed to undertake more challenging research (policy research, health economics, quality assurance etc). A good career path is also necessary for researchers in order to attract and retain the best professionals.

6.6 Networking

Linkages with other institutions and agencies involved in health research have been established at local, regional and international levels. We have benefitted greatly from training, meetings, information exchange and country visits. This is also true for the linkages, especially at the regional level, with the Joint HSR Project, the GTZ-supported HSR Project for Reproductive Health and Health Sector Reforms in the Southern African Region, the Commonwealth Regional Health Secretariat and COHRED/African ENHR network. It is felt, however, that there is a need to establish and strengthen links with other local and foreign institutions, and that benefits from present contacts could be further enhanced.