# SPECIAL REPORT*

# HEALTH RESEARCH IN MALAYSIA: OVERVIEW AND FUTURE DIRECTIONS

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## INTRODUCTION

The Institute for Medical Research (IMR) was established in Kuala Lumpur, Malaysia in 1901, as an offshoot of the London School of Hygiene and Tropical Medicine. Throughout its more than 90 years of operation in Malaysia, the IMR has carried out a wide range of highly significant programs which have made valuable contributions to knowledge of tropical diseases and to research development, to the teaching and training of medical and other health personnel, and have rendered a great many health services on a continuous basis to the people of Malaysia and to the people of Southeast Asia as a whole. This story is told in more detail in a recent report (Jegathesan, 1992) on the occasion of the 90th annivesary of IMR.

## RESEARCH AND DEVELOPMENT

### Historical focus

In the early period of IMR there were three major areas of concerted research attention:

1. Cause and treatment of beri-beri.
2. Diagnosis, causative agents, treatment and control of malaria.
3. Biology, ecology and treatment of scrub typhus.

Important contributions were made in each of these areas.

### Key later research achievements

A number of milestones in IMR research history in the past three decades have made outstanding contributions nationally or internationally:

1. Establishment and close cooperation with the National Filariasis Program, from 1961 until now, with widespread success in controlling the disease.

2. Operations research leading to the Ministry of Health's Disinfection and Sterilization Policy, starting in 1979.

3. In 1981 scientists in the Filariasis Division succeeded in culturing the human filarial parasite, *Brugia malayi,* in an *in vitro* system from the infective larval stage (L3) to the fourth (L4) and fifth (L5) stages. This work has provided the means for detailed study of antigens and DNA of this parasite, with implications for diagnostic technology and potential vaccine development.

4. During 1981-1983 a new schistosome parasite species, *Schistosoma malayensis,* was discovered in Pahang State, north of Kuala Lumpur.

5. In 1983 infection of *Brugia malaya* in a local species of leaf monkey, *Presbytis melalophos,* was developed as an excellent model for drug trials for the treatment of filariasis.

6. In 1989 the Entomology Division isolated a local strain of *Bacillus thuringiensis* that is much more potent than conventional strains for biological control of mosquitos.

In addition to these highlights, many other contributions have been made in the following fields; (1) malaria; (2) filariasis; (3) schistosomiasis; (4) other intestinal parasitic infections; (5) bacterial diseases; (6) rickettsial diseases; (7) viral diseases; (8) human nutrition; (9) mosquito control by biological and chemical agents; (10) cancer; (11) blood disorders and genetics; (12) environmental impact assessment; (13) specialized diagnostics. Details are given in Jegathesan (1992).

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**Current thrusts at IMR**

Many of these areas of research will continue to be vigorously pursued. However, there is a wider dimension to IMR's special place in the Malaysian healthcare infrastructure.

Thus, the Institute is the main research arm of the Ministry of Health of Malaysia, the IMR Director doubling up as the Program Director for Research in the Ministry. The IMR is a regional center for the World Health Organization and over a number of years WHO has focused on strengthening work in epidemiology and in immunology. It is now turning the focus towards nutrition strengthening, while new thrusts have been initiated in behavioral research and initiatives are underway in industrial and environmental health.

Nutrition is a well-established discipline at IMR. Among the various activities planned are large-scale studies of the nutritional status of various population groups in the country to be carried out over the next five years. It is aimed to use the information gathered to assist planners and policy makers to target particular groups for nutrition-related interventions. The extent of iodine deficiency disorders, especially among the rural populations of East Malaysia, needs to be clarified in order to identify the types of interventions that are likely to be successful. These studies will be carried out in conjunction with the Ministry's planned National Iodine Deficiency Disorder Control Program.

Vitamin A deficiency, anemia and chronic under-nutrition still affect certain sections of the Malaysian population; in the short term, effective measures for preventing and controlling these deficiencies should be developed with the help of planned research. With increasing affluence, however, problems associated with over-nutrition should receive greater attention. A systematic assessment of the relative importance of risk factors for cardiovascular disease and of their prevalence in the Malaysia population is also needed, research will be required to find the most effective means of behavioral change for risk reduction. Greater attention will have to be dedicated to dietary means of preventing diseases such as cancer and osteoporosis.

It is this continual interaction between research and public health planning and operations that gives IMR its special role, through which it is hoped that health research in Malaysia will continue to be directed and applied to major health problems.

## REFERENCES

Jegathesan M. Special Report: Overview of research at the Institute for Medical Research, Kuala Lumpur, on its ninetieth anniversary. *Southeast Asian J Trop Med Public Health* 1992; 23.