



South African  
Medical Research Council  
'Building a healthy nation through research'

Research Strategy 2005-2010

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## 1. Background

The MRC Board and Executive Management Committee have emphasised the need to sharpen the focus of the MRC on its core business: research. The *MRC Research Strategy 2005–2010* has therefore been developed to ensure that the MRC's research activities are relevant, responsive and of high quality. This is essential if MRC research is to achieve, through research translation, its vision of 'building a healthy nation through research'.

The mandate of the Medical Research Council is legislated in terms of Act 58 of 1991:

*'The objects of the MRC are, through research, development and technology transfer, to promote the improvement of the health and the quality of life of the population of the Republic, and to perform such other functions as may be assigned to the MRC by or under this Act.'*

In parallel with the development of the *MRC Research Strategy 2005–2010*, a new strategic plan, the *MRC Strategic Plan 2005–2010*, has been developed. The plan lists nine strategic objectives for the MRC, of which the primary strategic objective of the MRC is research:

The nine MRC strategic objectives are grouped into three categories:

### ***A. Promotion and conduction of research***

Promoting and conducting research is the core business and primary strategic objective of the MRC as a knowledge-producing organisation. Without research, the vision of the MRC of 'building a healthy nation through research' cannot be achieved.

1. Research strategy and business plan

### ***B. Professional support for research***

Research cannot take place, and staff cannot develop, unless supported by corporate professional services.

2. Financial model strategy and plan
3. Opportunity and risk management
4. Capacity development
5. Transformation and development

### ***C. Research translation***

Research makes no difference to health and quality of life unless it is translated into interventions such as policy, practice and products, which can have an impact on the health and quality of life of the nation.

6. Innovation management and technology transfer
7. Informatics and knowledge management
8. Research translation
9. Stakeholder management

This refocusing of the business of the MRC is also manifested in the restructuring of the Executive Research Directorate that has taken place since late 2004, which included the

merger of the Executive Research Directorate with the Capacity Development Directorate in 2004, with a single Executive Director for Research where formerly there were two.

The restructuring of the MRC executive will be completed in 2006 with regard to MRC professional support structures. These developments will complement the research strategy and consolidate the position of research as the primary focus of the organisation.

Health research is complex and multifaceted, and there is thus a need to redefine the overarching strategy of the organisation in a manner that maximises the opportunities and minimises the threats posed by the changing macro-political landscape. This comes at a time when the country is beset by multiple major health challenges for which the MRC, as well as other science councils and higher education institutes, need to find new health solutions derived from the new knowledge generated by health and related research.

## **2. MRC research priorities**

The MRC's research prioritisation, research portfolio, and resource allocation are based on three major inputs:

- The burden of disease and health profile of South Africa as outlined by the Combined Approach of the Ad Hoc Committee on Health Research for Development
- Strategic priorities in health and development in South Africa as identified by such initiatives as South Africa's Foresight Exercise, South African Government programmes and the NEPAD Secretariat
- The need for the training and capacity building in health research.

The high-level research strategy presented here is based on the above three key drivers for health research priorities in South Africa and the region.

## **3. Process**

Following a board strategy workshop in August 2005, a research strategy task team was constituted comprising MRC unit directors, members of the Executive Management Committee, and a facilitator from outside the MRC. This was followed by a period of individual communication between the facilitator and the team members to solicit preliminary inputs for the synthesis of a discussion document.

A task team workshop was held on 28 September 2005 to discuss the initial document, with a view to producing a draft research strategy for ratification at the second workshop on 24 October 2005. Input into the draft MRC research strategy was obtained from MRC unit directors during November 2005 and the draft document was presented to, and amended by, the Research and Development Committee of the MRC Board on 26 November 2005. The

research strategy document was further refined at a meeting of members of the Research and Development Committee and the MRC Executive on 11 January 2006 in preparation for presentation to the full MRC Board on 20 January 2006.

#### **4. Current MRC research strategy**

The current overarching research strategy of the MRC is articulated through the six national programmes into which the MRC units and other research entities were grouped in the year 2000. Reference to the national programmes features prominently in the descriptive documents issued by the MRC to advertise its activities. Despite this, knowledge and recognition of the six national programmes is generally poor, and significant confusion exists both inside and outside the MRC as to the structure of these programmes, their functions, their coordination and their objectives. Further confusion is prevalent concerning the terms ‘lead programme’ and ‘national programme’.

The six national programmes are:

Environment And Development  
Health Systems And Policy  
Non-Communicable Diseases  
Infection And Immunity  
Molecules To Disease  
Women And Child Health

The confusion as to the precise meaning of the national programmes is in part because they have not had individual champions to lead them; and partly because the actual divisions reflect thinking that was well founded at the time, but has been to some extent superseded by events. For example, the existence of a national programme entitled ‘molecules to disease’ carries an implication that the units and other research entities classified within the non-communicable diseases and the infection and immunity national programmes do not concern themselves particularly with molecular issues. In reality, molecular research is increasingly becoming the major focus for virtually all cutting-edge biomedical research. Moreover, there is a growing recognition of the importance of molecular epidemiology and of health systems that are reliant on molecular insights.

A final criticism of the six national programmes is the concern that such a classification leads to ‘silo-type’ thinking. The real strength of the MRC lies in its truly comprehensive, integrated and national health research approach; borne of many years of experience in conducting (intramural) and supporting (extramural) medical research in all its dimensions. The MRC’s activities uniquely straddle issues of health, including population health (with special social science skills), disease and disease mechanisms (with special biomedical science skills) and health systems, settings and policy research, in which the MRC plays a unique national role.

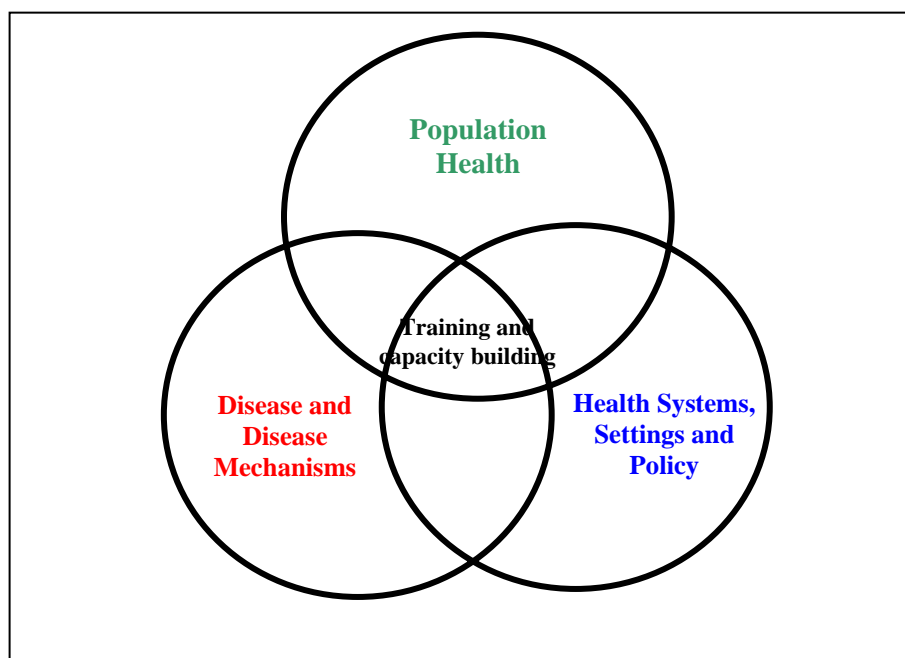
#### **5. Proposed strategic focus**

With the need to emphasise the integrated nature of the MRC's research activities and insight, the question arises as to whether or not there should be any divisions at all in the groupings of the research entities. The fact remains, however, that there are inevitably differences in orientation between social and health scientists.

The MRC emphasises the complementarities of these two perspectives, which broadly place emphasis on the world of health and the world of disease respectively. It is self-evident that the function of any medical endeavour, including medical research, is to strive to retain the population in a state of health. It also recognises that, inevitably, disease will occur, and that in order to prevent, treat or palliate disease, knowledge concerning disease is necessary. If that knowledge is not available, research needs to be done to procure it. In order to monitor and facilitate the flux between states of health and states of disease, systems are necessary; and the requisite research into such systems is as necessary as is research into the states of health and disease.

For these reasons, it is proposed that MRC research priorities should be defined in a way that recognises the complementarities of three quite different, but synergistic, focal areas of medical research. The three designated focal areas (Fig. 1) are:

- Population Health
- Disease and Disease Mechanisms
- Systems, Settings and Policy



**Figure 1: MRC research focal areas**

This configuration does not imply a new division into three silos, where previously there were six; but rather it stresses that ultimately all research, especially strategically driven research, should impact on all three focal areas.

A vision for each focal area is articulated below. Strategic research priorities from each focal area will need to be defined at a later date, during implementation of the *MRC Research Strategy 2005–2010*.

- **Population Health:** Health is related to well-being, be it physical, mental, or social, and is not only an absence of disease. Population health research is thus geared towards providing new health knowledge, translating this and existing knowledge into programmes and actions that will ultimately lead to actual and measurable improvements in population health, and maintaining those who are well in a state of health. The nature of the research will consider the local and national context, the social and cultural context, as well as the individual's context within communities and societies.
- **Health Systems, Settings and Policy:** The health system is extremely complex, involving multiple levels, and is further complicated by the interplay between public and private sectors as well as traditional medicine. Health systems research, policy analysis and settings-based health promotion research are essential to build the evidence base to assist Government and health care providers in making both long- and medium-term decisions that will improve the health of the nation and the quality of appropriate health services.
- **Disease and Disease Mechanisms:** The traditional anatomic approach to research on disease and disease mechanisms focused on the predominant organ affected. This approach is increasingly being replaced by both genomic and non-genomic approaches, and combinations of both. The genomic disease group includes inherited disease, infectious diseases and somatic mutations. Non-genomic diseases include disorders of nutrition and those caused by trauma (physical, chemical or emotional).

With regard to intramural research and the interaction with outside agencies and research structures, the greatest overlap between the MRC research strategy and the strategy of the National Department of Health will most likely occur in the Population Health focal area. The Health Systems, Settings and Policy focal area, on the other hand, may constitute the core of many of the MRC's intramural research activities.

Clearly there are areas of overlap between the focal areas, which emphasises the integrated nature of MRC research activities – directed collectively towards the attainment of tangible health and quality of life benefits for populations and individuals.

The most important overlap between all three focal areas is in training and capacity building, which serves to emphasise that one of the key cross-cutting research support functions of the MRC is to nurture a new generation of research scientists in all three focal areas.

The three focal areas will be underpinned by a research management strategy developed as part of the *MRC Strategic Plan 2005–2010*.

The focal areas will be strengthened through the following:

- a) Direct support of research and training activities
- b) Development and support of core technology platforms
- c) Knowledge and innovation management
- d) Research translation and health equity.

**a) Direct support of research and training activities**

Research and training in the health sciences will be supported through:

- i) Research grants in the MRC's areas of research priorities, which should be of substantial value to allow the research to be internationally competitive
- ii) Strategic funding to national programmes and rapid response projects
- iii) Increased numbers of career development awards, post-doctoral fellowships and PhD studentships. These full-time research and training positions, awarded on a competitive basis, will help in attaining the critical mass required for the desired productivity.

**b) Development and support of core technology platforms**

To provide researchers with the necessary technological support, the following measures could be considered, following a full audit and situational analysis:

- i) Reconfiguration and consolidation of some of the major intramural laboratory-based equipment and expertise into core facilities for MRC-supported research activities
- ii) Reconfiguration and consolidation of intramural facilities in population health and health systems to provide core support in areas such as epidemiology and biostatistics to MRC-support researchers
- iii) Collaboration with DST, CSIR, NRF and BRICS to establish cutting-edge technologies (e.g. structural biology and computational chemistry) that MRC-supported researchers are currently unable to access in South Africa
- iv) Continuing support and strengthening of extramural specialist facilities (e.g. computational biology, genomics and transgenic and knock-out animal facilities) so that they become national core facilities for health researchers in South Africa
- v) Strengthening and expansion of existing MRC animal facilities for pre-clinical and toxicological studies
- vi) Strengthening and rational use of MRC-supported clinical trials facilities and expertise.

**c) Knowledge and innovation management**

This intramural activity should be expanded and strengthened to serve as a national core facility for all MRC-supported researchers.

**d) Research translation and health equity**

This would provide support in areas such as:

- i) Pilot-scale production and scale-up of biological products, as well as their commercialisation. This should be done in close collaboration with the CSIR and the BRICS
- ii) Community involvement and benefit arrangements. This could be done mainly through the existing intramural units.

**6. Defining policy for the recognition and management of research entities**

In order to achieve the MRC's research objectives as outlined above, research priorities will be driven by two different mechanisms:

- a) Initiatives that are strategic in nature and are driven by the MRC Board and executive and are responded to by individual researchers
- b) Initiatives that are driven by individuals requesting a response from the MRC in terms of its policies.

Initiatives that are strategic in nature are identified as MRC national collaborative research programmes (NCRPs) and rapid response projects. Some collaborative research groups (CRGs) could fall under this category.

Initiatives driven by individuals are identified as research projects and units. Some units and projects in the same thematic area could also wish to work together within CRGs.

The following definitions are suggested for the four categories of research entities:

**6.1 Research project**

This constitutes the fundamental unitary research activity conducted or supported by the MRC. Projects will be recognised either as stand-alone, single initiative, or within the context of larger entities such as units or strategic programmes.

Each project should be motivated by an accountable project leader, have a clearly defined research question, describe its proposed methodological approach and include a defensible and realistic budget. It could have a planned duration of one, two or three years, and must be closely monitored and accounted.

Projects can either be entirely initiated by individuals, or be initiated by individuals in response to specific calls for proposals from the MRC Executive Management Committee.

There will be three categories of research project:

- **Self-initiated**
- **Developmental**
- **Rapid response**

The **self-initiated project** is the prototypical unit of research activity. The funding of the project is based on the scientific merit of the project and the research productivity of the project leader.

The **developmental project** has as its principal aim the creation of a practical research framework within which new researchers are inducted into the research process. For this to be a relevant and useful exercise it needs to qualify for all the other criteria as specified for the self-initiated project. To succeed, the project may require support and mentoring from established researchers as well as input from the MRC Capacity Development Technical Unit.

The **rapid response project** is solicited by the MRC Board and executive in the form of specific calls for proposals in response to specific health or disease issues as they unfold. Emergency contingency funds are budgeted for retention by the MRC executive for commitment at short notice.

Projects could be stand-alone entities, or could choose to join other thematically related projects within a unit, CRG or NCRP. Currently researchers within an MRC unit are not allowed to apply in an individual capacity for MRC grants or funds. This is an impediment to the development of young researchers, and this constraint should be removed.

## **6.2 Research unit**

Currently, the MRC research unit is considered the prime means by which the MRC recognises and supports the country's outstanding health researchers. The number of MRC research entities has now grown to nearly fifty, and not all of them are internationally competitive or productive. Most of the extra-mural units/groups/centres receive only a fraction of their research costs from the MRC, and the MRC is in no position to optimally support the large number of them that have been established over the years. Moreover, unqualified support for the continuation of the current MRC perception of units could lead to the perpetuation of 'silos' instead of the collaborative and multidisciplinary approach to research that the MRC is contemplating in its new *MRC Strategic Plan 2005–2010*. The following measures are proposed to address the above problems:

- a) Outstanding researchers and individual research initiatives, both intramural and extramural, should continue to be encouraged to compete for the establishment of new

units or the continuation of existing units in areas where they are highly productive, and where there is no competitive advantage in joining forces with other MRC research entities.

- b) Wherever possible and practicable, individual units and projects should be encouraged to join, or to work strategically with, other thematically related research entities within collaborative groups and national programmes in areas of national and regional priority.
- c) Intramural research activities, especially in the Health Systems, Settings and Policy focal area, could continue to be best served through the consolidation, and possible merger, of existing intramural units.
- d) Other intramural units could be encouraged to reconfigure and join forces to form core facilities for the provision of technology support to the MRC's collaborative and national health research initiatives.
- e) Intramural research units and projects which are not involved in service provision should be funded under the same guidelines as extramural research units.

### **6.3 Collaborative research group (CRG)**

This new MRC research entity aims to encourage broader networking and diversification in health research. This could be a researcher-led or executive initiative and consists of two or more self-associated project leaders and unit directors working on a specific theme. It is a flexible, dynamic structure but has formal recognition; can be transnational or transcontinental; and should be multidisciplinary and multi-institutional to encourage both internal and external cross-fertilisation.

### **6.4 National collaborative research programme (NCRP)**

This is normally an MRC Board and executive initiative. It addresses a major national strategic health, disease, or systems issue. This constitutes one of the major mechanisms for the alignment of the strategic objectives of the MRC with the Department of Health. The expected outcomes should normally address all three focal areas: Population Health, Disease and Disease Mechanisms, and Health Systems, Settings and Policy.

The MRC national collaborative research programmes constitute a national base of investigators, comprising intra- and extramural unit directors and other entities whose objectives are in alignment with those of the MRC. The lifespan of an MRC national collaborative research programme will be determined by the objectives of the individual programme and will be subject to review at predetermined intervals. The MRC will collaborate with partners such as the National Department of Health, the Department of Science and Technology and the Department of Trade and Industry to obtain funding support for such entities.

The proposed MRC national collaborative research programmes (NCRPs) and the MRC collaborative research groups (CRGs) will be selected from topics within these areas:

- HIV and AIDS (including SAAVI)
- Tuberculosis
- Malaria
- Cancer
- African health indigenous knowledge systems, and drug discovery and development initiatives
- Genomics, proteomics and computational biology
- Nutrition
- Crime, violence and injury
- Women, maternal and child health
- Cardiovascular and metabolic diseases
- Mental health and functional disorders
- Policy and implementation

## **7. Implementation phase**

A sound implementation plan will be developed and articulated to the organisation. It is foreseen that full implementation of the *MRC Research Strategy 2005–2010* will be completed over a period of some years. As part of the implementation process, focal areas should be driven by the MRC Vice President: Research and his team, which will articulate a visionary perspective for research within each focal area.

The MRC Vice President: Research should conduct frequent and regular strategic meetings to ensure an ongoing coherence in MRC research strategy as well as constitute grants committees for each focal area. To reflect the need for an integrated research strategy, there should be overlap between such committees, but the Population Health awards committee should be drawn predominantly from social scientists and population health scientists; the Disease and Disease Mechanisms awards committee should be drawn predominantly from biomedical scientists as well as research clinicians; whilst the Health Systems, Settings and Policy grants committee should reflect a balance of individuals drawn from the other two committees (including a few policy makers). It may be useful to include a lay member of the community on each committee.

Another utility of the new configuration is that it will offer research entity leaders the option of defining their own preferred focal area within the vision and objectives of which their own research activities will be assessed and monitored. The MRC will also pay specific attention to strengthening existing, and creating new technology platforms to support its research strategy.

## **8. Conclusion**

The MRC, through its new *Research Strategy 2005–2010*, intends to optimise the relevance and impact of its research for the health and quality of life of the population. The research strategy will be implemented in the context of the broader *MRC Strategic Plan 2005–2010*,

and in parallel with the MRC transformation and development plan. By these means the MRC will ensure that its research is aligned with its vision of 'building a healthy nation through research'.