



Ministry of Health

**NATIONAL HEALTH RESEARCH AGENDA
2012-2016**

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THE NATIONAL HEALTH RESEARCH AGENDA

Ministry of Health

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ACRONYMS AND ABBREVIATIONS

COMREC	College of Medicine Research and Ethics Committee
CSWs	Commercial Sex Workers
DFID	United Kingdom Department for International Development
EHP	Essential Health Package
IDRC	International Development Research Centre
HSSP	Health Sector Strategic Plan
HRCSI	Health Research Capacity Strengthening Initiative (Programme funded in Malawi by DFID and Wellcome Trust)
GoM	Government of Malawi
IVDUs	Intravenous Drug Users
MGDS II	Malawi Growth Development Strategy II
MSMs	Males Having Sex with Males
MOH	Ministry of Health
NCDs	Non Communicable Diseases
NCST	National Commission for Science and Technology
NHRA	National Health Research Agenda
NHSRC	National Health Sciences Research Committee
NTDs	Neglected Tropical Diseases
IEC	Information, Education and Communication
MDA	Mass Drug Administration
BEmOC	Basic Emergency Obstetric Care
MDR	MultiDrug Resistance

FOREWORD

The Government of the Republic of Malawi (GoM) subscribes and reaffirms its commitment to the philosophy and ideals of the internationally agreed development goals that include the Millennium Development Goals (MDGs). At a national level, Malawi has her own national development strategy called the Malawi Growth and Development Strategy II (MGDS II) that covers the period from 2011 to 2016. The MGDS II is, in essence, a conduit through which GoM advocates her commitment towards achieving the MDGs. While the MDGs 4, 5 and 6 directly relate to human health that require national governments to make efforts in realizing them, the MGDS II has equally isolated health sector as one of the key social development sub-theme requiring the attention of the Government. As an area of focus within the MGDS II, the health sub-theme (comprising of *Public Health, Sanitation, Malaria, and HIV and AIDS Management*) was recognized and espoused as one of the nine key priority areas.

In contributing to the achievement of the health related goals of the MDGs and MGDS II, Malawi through the Ministry of Health, developed the Health Sector Strategic Plan (HSSP) covering the same period as the MGDS II. The success of the HSSP in achieving better health service delivery depends on careful evidence-based policy and decision making. Health research provides evidence based policy and decision making. It is acknowledged world over that research requires enormous amount of resources which are often limited. When operating in an environment of limited resources, it becomes prudent to set priorities on which concerted effort could be targeted. The GoM with support from its partners has, therefore, developed this National Health Research Agenda, as a policy document, that directs priorities in health research covering the period from 2012 to 2016 to be implemented in tandem with the MGDS II and HSSP. While the Government of Malawi appreciates the diversity of needs and interests of different stakeholders in health research, stakeholders are called upon to ensure that research in Malawi is addressing the research priorities that have been outlined in this document during the period of its implementation. It is, therefore, expected that stakeholders will take deliberate steps to conduct and support research in the identified priorities. The Government of Malawi will endeavor to channel resources to support research in these priorities. A special appeal is being made to all co-operating partners, both national and international, to support the undertaking of research in the identified areas.

Honourable Dr Jean Kalilani, MP
MINISTER OF HEALTH

ACKNOWLEDGEMENT

A National Taskforce was formed to oversee the development of the National Health Research Agenda (NHRA). The National Commission for Science and Technology (NCST) through its Health Research Capacity Strengthening Initiative (HRCSI) programme, with the support of the National Taskforce, coordinated the development of this agenda. Throughout the Agenda development process, the NCST worked jointly with the Ministry of Health (MOH) as a relevant sectoral Ministry in matters of health research. The Ministry provided sectoral policy oversight and quality assurance services at every stage of the development process.

The Government of Malawi through the MOH would like to acknowledge the efforts of all experts and stakeholders, too numerous to mention, that were engaged at different stages of the Agenda development process. I would like to pay special tribute to the following groups and individuals:

- **Dr Charles C.V. Mwansambo**, the Principal Secretary for Health and Chairperson of the National Taskforce for his leadership and guidance throughout the development process. Profound thanks to the Taskforce members and members of the sub-groups for their outstanding commitment and effort to the development process of this Agenda. The composition of the taskforce appears on the last page of this document.
- **Professor J. J. Wirima** who facilitated the first ever workshop of the National Taskforce on the development of the NHRA. With his expertise, he led the identification of the Thematic Priority Research Areas contained in this Agenda. The identification of these areas provided the framework of the Agenda development process.
- **Consultants** who undertook gap analysis studies in the identified thematic priority areas of research for their dedication, patience and hard work in coming up with quality reports that informed the drafting of this Agenda. These reports are available at the HRCSI pages on the NCST website.
- **NHRA Drafting Committee** which drafted the Agenda document. This was a team of experts that crafted the document in a logical fashion using the gap analysis reports and a wide range of other source materials using their expertise and experience. The drafting committee also served as an editorial team. It was composed of Dr Charles V. Mwansambo (Chairman of the Drafting Committee); Dr Victor Mwapasa (Vice Chairman of the Drafting Team); Dr Alister Munthali; Dr Kamija Phiri; Dr Damson D. Kathyola; Dr Charles Chilimampungu and Mr Hudson Nkunika.

- The drafting committee was backstopped by the following members of the Secretariat: Dr Mathildah Chithila-Munthali (HRCSI Program Manager), Dr Tchaka Ndhlovu, Mr Mike G. Kachedwa and Mr Andrew M. Mpesi.
- **All stakeholders** who constructively critiqued and reshaped the document at the stakeholders' consultative meetings and whose inputs were duly incorporated.

Thanks also go to Dr Henderson M. Chimoyo, Director General of the National Commission for Science and Technology, for his leadership and commitment to the HRCSI mission and objectives. The work of the Health Research Capacity Strengthening Initiative (HRCSI) staff and their counterparts who worked behind the scenes and provided coordination remain commendable.

The National Health Research Agenda for 2012-2016 was developed as one of the milestones of the HRCSI in Malawi, a programme under the joint funding of the UK Department for International Development (DFID) and Wellcome Trust with technical assistance of the International Development Research Centre (IDRC). As well as funding the HRCSI implementation and the development of the NHRA, these cooperating partners have also supported GoM and its health sector programs and have presented an invaluable gift to the people of Malawi. Government of Malawi, therefore, remains sincerely thankful to them.

W. Samute

SECRETARY FOR HEALTH

1.0 INTRODUCTION

The conduct of health or biomedical research in Malawi dates back to pre-independence era. Since then, the need for health research has been growing in order to inform policy and health care service delivery. Most of the research has been operations research commissioned by national disease control programmes on the one hand, while basic health research has been influenced largely by the academic community on the other hand, while a greater proportion of all health research conducted in Malawi has been externally driven, thereby leaving little room, if any, for Malawi to focus on conducting locally relevant priority research. Recognising this growing need for health research, Malawi through the Health Research Capacity Strengthening Initiative, a programme operating in Malawi with funding from the UK Department for International Development (DFID) and Wellcome Trust, embarked on a process of developing her own National Health Research Agenda that covers a period of five years from 2012 to 2016.

This National Health Research Agenda represents nationally set and agreed priorities in which research efforts for Malawi will be concentrated over the next five years. The Agenda document itself is organized into eleven chapters or sections. These are: Introduction; Background; Goal and Objectives; Guiding Principles; Methodology; Areas of Research; Implementation of the Research Agenda; Financing of the National Health Research Agenda; Dissemination of Research Findings; Monitoring and Evaluation of the Agenda; and List of Source Materials.

This National Health Research Agenda finally represents the Government of Malawi policy need and interest for research to be carried out in the identified priority areas. Research in the identified priorities is geared towards obtaining evidence which is much needed for policy and decision making. Government of Malawi, therefore, expects all cadres of stakeholders to support the implementation of this National Health Research Agenda.

2.0 BACKGROUND

The Government of Malawi (GoM) recognises the importance of health and health research for socio-economic development. The Malawi Growth and Development Strategy (MGDS II) which is an overall national development agenda acknowledges that a healthy population is necessary if the country is to achieve sustainable economic growth. It is against this background that the National Health Research Agenda has been developed. This Agenda document will be implemented alongside the Health Sector Strategic Plan (HSSP) and the National Health Policy (NHP) which will guide the implementation of interventions in the health sector for the period 2011-2016. The development of the NHRA has been in line with Malawi's extended Essential Health Package (EHP) which includes: HIV and AIDS; Acute Respiratory Infections (ARIs); Malaria; Diarrhoeal Diseases; Perinatal Conditions; Non-Communicable Diseases (NCDs) ; Tuberculosis; Malnutrition; Cancers; Vaccine preventable diseases; Mental illness (including epilepsy); Neglected Tropical Diseases (NTDs); and Eye, Ear and Skin infections.

Health indicators have generally improved over the last decade. The infant and under five mortality rate has been decreasing from 76/1000 and 133/1000 to 66/1000 and 112/1000 live births in 2004 and 2010, respectively. The maternal mortality ratio (MMR) has declined from 807 in 2006 to 675 per 100,000 live births in 2010. Despite the improvement in these indicators, Malawi still faces major health challenges due to a persisting high burden of preventable and treatable diseases, and significant limitations of the health system to respond. The total fertility rate (TFR) is estimated at 5.2 and the contraceptive prevalence rate (CPR) is at 43%. The number of tuberculosis case notifications increased from 5,000 in 1985 to 25,000 cases in 2010. Malaria remains a major cause of morbidity and mortality in Malawi. The number of presumptive cases of malaria increased from 3.7 million in 2005 to 6.1 million in 2009. The burden of NCDs in Malawi is an emerging problem and account for at least 12% of the Total Disability Adjusted Life Years in Malawi which is fourth behind HIV and AIDS, other infections and parasitic and respiratory diseases. NCDs are thought to be the second leading cause of deaths in adults. A STEPS survey conducted in Malawi in 2009 clearly demonstrated

that NCDs and their risk factors are a significant public health problem and hence their inclusion in the expanded EHP.

A lot of research is being done in Malawi. This research, however, is mostly commissioned, conducted and funded externally and in most cases does not align with the national health priorities including the EHP. In order to ensure that research addresses Malawi's health priorities this NHRA has been developed and will guide investments in health research aimed at improving the health status of people in Malawi and contribute to the overall goal of the MGDS II and the achievement of the Millennium Development Goals.

3.0 GOAL AND OBJECTIVES OF THE NATIONAL HEALTH RESEARCH AGENDA

3.1 Goal

The overall goal of the NHRA is to guide researchers, policy makers, program implementers, academic institutions, health development partners and other stakeholders on health research priorities for Malawi.

3.2 Specific Objectives

The specific objectives of the agenda are to:

- Promote the conduct of health research responsive to the priority health needs of Malawi.
- Facilitate the mobilization of resources for the conduct of locally relevant health research
- Promote multidisciplinary and collaboration in the conduct of research
- Facilitate the coordination of health research conducted by various stakeholders.
- Promote the strengthening of capacity for conducting research in Malawi.
- Facilitate translation of research findings into policy and practice

4.0 GUIDING PRINCIPLES

The implementation of the National Health Research Agenda shall be guided by the following principles:

4.1 Political Will and Commitment

Undertaking meaningful research that addresses priority needs of Malawi requires adequate resources available through political will at all levels.

4.2 Demand Driven Research

Stakeholders shall be encouraged to conduct research responsive to priority health needs of Malawi.

4.3 Ethics, Human Rights and Law

The dignity and rights of all research participants including vulnerable populations shall be promoted and protected as enshrined in the bioethics principles, Constitution of the Republic of Malawi and all relevant Malawi laws, national policies, regulations and guidelines as well as in tandem with international law.

4.4 Networking, Public and Private Partnerships and Collaboration

Concerted efforts and strategic partnerships with public and private research institutions and with a cross-section of other stakeholders shall be promoted.

4.5 Multidisciplinarity and Complementarity

Research studies that are multidisciplinary and/or complementary in nature shall be promoted to enhance skills transfer, optimal usage of resources, and translation of research findings into policy and programmes.

4.6 Sensitivity to Gender Issues and Needs of Vulnerable Populations

Encourage fair participation of both genders and vulnerable populations in research taking into account their special needs, so as to reduce disparity in health care provision based on individuals' attributes.

5.0 METHODOLOGY

This section describes the approach and process that were followed in developing the National Health Research Agenda.

5.1 Approach and Process

Essential National Health Research (ENHR) and Child Health and Nutrition (CHNI) approaches were used to set research priorities. ENHR and CHNI are demand-driven approaches focusing on the analysis of health needs, people's expectations and societal trends. Basing on these approaches, the setting of research priorities was guided by principles of country-drivenness; analytical evidence; stakeholder participation; transparency; iterativeness and value-drivenness.

The general process that was followed included the undertaking of the following key activities;

- Establishment of the National Task Force for the Development of the NHRA with concrete terms of reference
- National Taskforce Workshop for the Identification of the Thematic Priority Research Areas. The identification was done using Delphi method
- Recruitment and induction of consultants to undertake gap analysis studies in the identified thematic priority areas of research to inform the drafting of the NHRA
- Conducting gap analysis studies by the consultants using literature review, key informant interviews and focus group discussions as data collection techniques.
- Subgroup meetings for each thematic priority thematic area to review findings of gap analysis studies
- Revision of gap analysis reports by consultants
- National Task Force Meeting to review revised gap analysis reports
- Appointment of the NHRA Drafting Team by the Chairman of the National Taskforce
- Drafting of the NHRA using the gap analysis reports

- Review of the Draft NHRA by a special team of advisors in health research
- Incorporation of comments from a team of advisors
- National stakeholders' consultative meeting on the draft NHRA
- Finalization of the NHRA document by incorporating comments from stakeholders workshop

5.2 Criteria for Setting Priorities

Each of the identified specific priorities was analyzed according to five key criteria. These criteria are:

1. Current and potential burden of disease;
2. Feasibility and deliverability of the research taking into consideration human, financial and infrastructural resources and the acceptability of the research;
3. Expected impact of the research on policy/decision making/system changes, disease burden reduction, health care delivery services, knowledge for further research and design of interventions, direct and indirect effects, short and long term effects;
4. Effects on equity and social justice to ensure the concerns of vulnerable groups and disadvantage groups are considered; and
5. Contribution to research capacity strengthening in Malawi.

Each of the identified priorities was scored against the above mentioned criteria on a scale of 1-5 and ranked accordingly.

6.0 RESEARCH AREAS

This section presents the key research priorities. The priorities are organized in nine disease and non-disease thematic areas which were identified as key priority research areas for Malawi. These areas are: Communicable diseases; Non-communicable diseases; Sexual and reproductive health; Trauma; Mental health; Environmental health; Nutrition; Health systems; and Community system strengthening.

Within each of these thematic priority areas, priorities are articulated in specific sub-themes. An attempt has been made to outline these priorities within each sub-theme under the following structure: Epidemiology, Prevention, Diagnostics and Treatment. This structure has been followed for all disease-based thematic areas. The research priorities are outlined in a reasonably broader sense with a view of allowing a researcher to have discretionary opportunity and flexibility to design specific research studies that address a particular identified topical area of priority research.

6.1 Communicable Diseases

The top six conditions are HIV and AIDS, Malaria, Tuberculosis (TB), Pneumonia, Diarrhoeal diseases and Neglected Tropical Diseases (NTD's).

6.1.1 Research Priorities for HIV and AIDS

6.1.1.1 Epidemiology

- Acute HIV infection in adults
- The burden and trends of blood borne infections associated with HIV, including Hepatitis and human papilloma virus in Malawi
- Impact of HIV and AIDS on cultural perceptions on disease, death and the dying
- The role of high risk groups (CSWs, MSMs, IVDUs) in HIV and AIDS transmission and prevention
- Determinants of HIV and AIDS transmission among co-habiting couples
- Trends and dynamics of HIV in the context of implementing various HIV interventions
- Impact of gender on HIV and AIDS prevention, care and support
- Impact of existing macro-level factors, such as structural adjustment programmes, policy/legal frameworks and food security policies on HIV and AIDS transmission, morbidity and mortality
- Socio-economic implications/impact of HIV interventions including ART in Malawi
- Trends and impact of HIV and AIDS on productivity of the private and public sector
- Trends and impact of stigma and discrimination on HIV and AIDS responses

6.1.1.2 Prevention

- Interventions to promote female condom use and HIV partner notification
- Efficacy, effectiveness and feasibility of novel interventions for prevention of heterosexual, homosexual and mother-to-child transmission of HIV
- Factors that influence adoption of positive behavior towards HIV prevention
- Effectiveness of various behavioural change interventions, especially among young people
- Cost-effectiveness of various HIV and AIDS prevention strategies
- Explore known HIV status and new episodes of Sexually Transmitted Infections

- Uptake of family planning methods in ART clients or People Living with HIV and AIDS.

6.1.1.3 *Diagnostics*

- Evaluate the efficiency and accuracy of the current whole blood rapid test (WBRT) kits
- Evaluate new candidates of WBRT kits
- Explore new strategies for early infant HIV diagnosis
- Role of point of care CD4+ testing
- Strategies for HIV viral load testing

6.1.1.4 *Treatment, Care and Support*

- Strategies for optimizing HIV treatment in infants and children in settings where access to care continues to be limited
- Strategies for detecting ART treatment failure in the context of limited ART monitoring resources
- Explore sustainable financing mechanisms for provision of antiretroviral drugs
- Studies on causes of delay of the development of full blown AIDS after HIV infection
- The efficacy and effectiveness of traditional medicine in the treatment of Opportunistic Infections (OIs)
- Health seeking behavior practices and determinants among people with HIV and AIDS and STIs
- Efficacy, effectiveness and feasibility of novel HIV treatment interventions
- Acceptability of the referral systems including home based care (HBC)
- Cost-effectiveness of various HIV and AIDS treatment strategies
- Levels and determinants of compliance and ART adherence
- Impact of ART roll out services on HIV Testing and Counseling uptake
- Challenges of HTC service provision
- Impact of HIV and AIDS on health care delivery systems
- Role of Youth in providing HIV care and support
- Impact of existing strategies and programmes addressing orphans and vulnerable children
- Impact of Option B+ implementation on pediatric HIV
- Assess models and challenges of integration of HIV and TB

6.1.2 Research Priorities for Malaria

6.1.2.1 Epidemiology

- Biology, ecology and distribution of malaria vectors
- Trends in burden and transmission of malaria.

6.1.2.2 Prevention

- Insecticide resistance status and their operational significance to LLINs, IRS and other vector control strategies
- Evaluating drug resistance management strategies, including rotational or mosaic approaches
- Evaluation of alternative vector control strategies
- Cost effectiveness of various vector management approaches
- Feasibility and acceptability of dichloro-diphenyl-trichlorethane (DDT) for IRS
- Effect of various prevention strategies on malaria parasite biology, including changes in predominant genotypes
- Innovative strategies of expanding delivery of Intermittent Preventive Therapy in pregnancy (IPTp) at community level
- Factors causing poor uptake of malaria control interventions in the community
- Innovative strategies for delivery of IEC for malaria prevention and treatment
- Efficacy, effectiveness and feasibility of preventive interventions against malaria

6.1.2.3 Diagnostics

- Validity and feasibility of new and available diagnostic tools

6.1.2.4 Treatment

- Strategies to improve early treatment of malaria within the community
- Factors affecting treatment of malaria by health workers in the context of increased availability of diagnostic services
- Parasite resistance to antimalarial drugs
- Factors responsible for non compliance of health workers to national malaria treatment guidelines
- Post marketing surveillance of the quality of drugs at service delivery points
- Trends in malaria drug efficacy
- Efficacy, effectiveness and feasibility of therapeutic interventions against malaria

6.1.3 Research Priorities for Tuberculosis

6.1.3.1 Epidemiology

- Assessment of burden of TB in the community
- Role of bovine TB in human morbidity and mortality, including its transmission and prevalence
- Trends in MDR and XDR-TB.

6.1.3.2 Prevention

- Assessment of models for community and social mobilization towards TB control, especially in the rural areas
- Efficacy, effectiveness and feasibility of preventive interventions against TB
- Strategies to improve access to high quality TB diagnostics in the community

6.1.3.3 Diagnostics

- Strategies to improve diagnosis of TB, especially TB in HIV-infected individuals and extrapulmonary TB.
- Develop and assess new technologies for diagnosis of TB

6.1.3.4 Treatment

- Efficacy, effectiveness and feasibility of new therapeutic interventions against TB

6.1.4 Research Priorities for Pneumonia

6.1.4.1 Epidemiology

- Trends in burden and type of pneumonia

6.1.4.2 Prevention

- Assessment of the efficacy of new preventive strategies.
- Surveillance of pneumonia vaccines coverage and effectiveness.

6.1.4.3 Diagnostics

- Assessing strategies for early clinical and laboratory-based diagnosis.

6.1.4.4 Treatment

- Assess new treatment strategies for pneumonia

6.1.5 Research Priorities for Diarrhoeal diseases

6.1.5.1 Epidemiology

- Assessment of burden and aetiology of diarrhoeal diseases in the community

6.1.5.2 Prevention

- Strategies to improve coverage of hygiene and sanitation interventions
- Assessment of models for community and social mobilization towards diarrhoea disease control, especially in the rural and high density urban areas
- Efficacy, effectiveness and feasibility of preventive interventions against diarrhoeal disease

6.1.5.3 Diagnostics

- Assess new strategies for diagnosis of diarrhoea-causing pathogens

6.1.5.4 Treatment

- Efficacy, effectiveness and feasibility of new therapeutic interventions against diarrhoea and its complications
- Strategies to improve management of diarrhoea outbreaks

6.1.6 Research Priorities for Neglected Tropical Diseases (NTDs)

This sub-section focuses on five top NTDs which are considered to be of high priority in Malawi, namely; Schistosomiasis, Trypanosomiasis, Onchocerciasis, lymphatic filariasis and Trachoma, including Soil transmitted helminths.

6.1.6.1 Epidemiology

- Characterize the determinants and distribution of NTDs
- Assess long term complications of some NTDs

6.1.6.2 Prevention

- Strategies for prevention of NTDs especially lymphatic filariasis and onchocerciasis

6.1.6.3 Diagnostics

- Validity and feasibility of new and available diagnostic tools

6.1.6.4 Treatment

- Assess new strategies for treatment of NTDs
- Assess the efficacy and effectiveness of MDA campaigns

6.2 Non-Communicable Diseases

This thematic area focuses on four top non-communicable conditions which are considered to be of high priority in Malawi, namely Cardiovascular disease (CVD); Cancer; Diabetes; and Chronic and recurrent lung disorders.

6.2.1 Research Priorities for Cardiovascular Disease (CVD)

6.2.1.1 Epidemiology

- Burden and trends of cardiovascular disease
- Determinants of cardiovascular disease in HIV and AIDS patients

6.2.1.2 Prevention

- Strategies that increase awareness of cardiovascular disease risk factors and need for screening for hypertension

6.2.1.3 Diagnostics

- Strategies for early screening and diagnosis of hypertension

6.2.1.4 Treatment

- Assessment of Cost-effective and evidence-based treatment protocols for hypertension and other risk factors for cardiovascular disease

6.2.2 Research Priorities for Cancer

6.2.2.1 Epidemiology

- Determinants, distribution and trends of common types of cancers.

6.2.2.2 Prevention

- Cost-effectiveness of various strategies for prevention of cancers including screening programmes
- Barriers, levels and determinants of uptake of proven strategies for the prevention of cancers and vaccination

6.2.2.3 Diagnostics

- Diagnosis and access to screening for cancer.

6.2.2.4 Treatment

- Treatment strategies for HIV and AIDS related malignancies
- Cost-effectiveness and evidence-based treatment protocols for common types of cancers
- Levels and determinants of access to evidence-based treatment of cancers

6.2.3 Research Priorities for Diabetes

6.2.3.1 Epidemiology

- Determinants and distribution of diabetes
- Trends and burden of diabetes and its complications

6.2.3.2 Prevention

- Feasibility of introducing screening programmes in the communities and clinics
- Development of innovative strategies for prevention of diabetes

6.2.3.3 Diagnostics

- Assessment of strategies for diagnosing diabetes and monitoring response to treatment in the context of limited resources
- Tools/techniques for early screening and diagnosis

6.2.3.4 Treatment

- Develop and evaluate cost-effective treatment protocols
- Innovative approaches to improve access to diabetic treatment

6.2.4 Research Priorities in Chronic and recurrent lung disorders

6.2.4.1 Epidemiology

- Magnitude, determinants and distribution of chronic and recurrent lung disorders, especially asthma.

6.2.4.2 Prevention

- Assessment of strategies for the prevention of exacerbations and treatment of chronic and recurrent lung disorders, especially asthma.

6.2.4.3 Treatment

- Development of innovative and cost-effective strategies for the treatment of chronic and recurrent lung disorders.

6.3 Sexual and Reproductive Health

6.3.1 Epidemiology

- Burden and trends of cancers affecting the reproductive system, including breast cancer
- Burden, trends and impact of STIs (including HIV), unplanned pregnancies and unsafe abortions, especially among the youth.
- Magnitude and trends of maternal and neonatal morbidity and mortality.
- Determinants of early sexual behaviour
- Sexuality patterns, trends and determinants among adolescents
- Impact of early child bearing on the mother, baby and family
- Determinants, extent and effects of sexual abuse

6.3.2 Prevention

- Impact of strategies for promoting male involvement in SRH services.
- Interventions and strategies to address stigma and discrimination resulting from obstetric fistula

- Impact of life skills education on adolescents

6.4 Trauma

6.4.1 *Epidemiology*

- Causes, extent, and nature of trauma and type of injuries and their long term outcome
- Identification of minimum data sets and use of distributed data collection and analyses procedures

6.4.2 *Prevention*

- Characterizing life-styles that increase the likelihood of trauma and injury
- Assessing effectiveness of technologies that prevent trauma and injury.
- Public education strategies about road safety for road users
- Outcome studies documenting the effectiveness of primary prevention

6.4.3 *Diagnostics*

- Diagnosis using cost-effective imaging techniques
- Evaluate innovative methods for diagnosis and localization of injuries

6.4.4 *Treatment*

- Effective strategies for pre-hospital trauma care including preparedness studies
- Treatment using safe and effective and inexpensive blood substitutes
- Strategies for an effective accident response system allowing for identification and management of high-risk groups

6.5 Mental Health

6.5.1 *Epidemiology*

- Burden, trends, distribution and determinants of mental health disorders, including psychological trauma
- Impact of mental health disorders on psychosocial development
- Understanding the link between mental and physical disorders, especially in vulnerable groups.

- Cultural and socioeconomic factors that may mediate knowledge of mental illness among caregivers
- Perception of public on mental disorders
- Relationship between substance abuse and mental disorders

6.5.2 Prevention

- Effective and culturally appropriate strategies to prevent substance abuse and mental disorders

6.5.3 Treatment

- Development of innovative and appropriate treatment strategies
- Use of traditional medicine in treating mental illness
- Adherence to drug treatment

6.6 Environmental Health

6.6.1 Water and Sanitation

- Assess access to sustainable safe water and improved sanitation facilities in Malawi
- Determine the impact of climate change on water resources
- Evaluate the impact of Community Led Total Sanitation (CLTS) on latrine coverage
- Determine the sustainability of operation and maintenance of water sources
- Assess the effectiveness of water treatment options at household level
- Assess the safety of EcoSan products (compost) from eco-toilets for agricultural re-use
- Assessment of appropriate sanitation technologies for congested and informal settlements in urban areas.

6.6.2 Food Safety and Hygiene

- Assess the safety of food in terms of microbiological and chemical contamination
- Assess hygiene practices in commercial food premises
- Assess the food safety management practices in commercial businesses

6.6.3 *Pollution Control*

- Effect of radioactive substances
- Management of solid waste
- Impact of agriculture chemicals on human health
- Characterize exposure to the general population from industrial processes and industrial and consumer products containing pollutants
- Characterize health of exposed populations and environment
- Understand workplace processes and factors that determine exposure to pollutants

6.6.4 *Occupational Health and Safety*

- Characterizing accidents and injuries in the workplace.
- Occupational disease prevalence, assessment, monitoring and reporting
- Monitoring exposure to occupational hazards.

6.7 Nutrition

6.7.1 *Epidemiology*

- Trends in nutritional status of population and its determinants
- Determinants of chronic malnutrition
- Determinants of micronutrient deficiencies, especially iron, iodine, Vitamin A and zinc
- Determinants of mortality rates in nutritional rehabilitation units.
- Dietary habits (practices) in pregnant women that affect birth outcomes
- Interactions between infection (including HIV) and nutrition, including estimation of energy demands (requirements) in HIV+ children with malnutrition
- Long term adverse effects of drugs and hormones used in enhancement of food production on human health
- Effects of high fibre diet on human health

6.7.2 *Prevention*

- Assessing nutritional content of locally-produced foods, optimal food processing methods and bioavailability of micronutrients
- Strategies to improve micronutrient content of food, including bio-fortification.
- Prevention of malnutrition in people living with HIV/AIDS
- Prevention strategies for chronic malnutrition

- Community strategies for preventing relapsing malnutrition after discharge
- Impact of health education programmes on micronutrient (including zinc, iodine and vitamin A) consumption

6.7.3 Treatment

- Management of moderate and acute malnutrition, including relapsing malnutrition following hospital discharge
- Optimal treatment options in people living with HIV/AIDS with severe acute malnutrition
- Assessing the effectiveness of different multidisciplinary programs (models) for reducing childhood malnutrition in the community.
- Extent of and barriers in the infant and young child feeding practices
- Barriers against use of optimal nutritional interventions in pregnant women

6.8 Health Systems

6.8.1 Governance/Stewardship

- Impact of decentralization and other health reforms including SWApS on health systems performance.
- Cost-effectiveness studies of health programs.
- Strategies for community engagement in implementation of health programs.
- Utilisation of research evidence and community needs on health policy formulation

6.8.2 Health Financing

- Alternative financing mechanisms for financial sustainability.
- Resource allocation mechanisms for health equity and positive health outcomes.
- Tracking studies for health financing
- Cost-benefit and cost-effective analysis of health care interventions

6.8.3 Human Resource for Health

- Strategies for HRH retention in the health sector.
- Impediment to HRH policies and regulations
- Impact of different models of task shifting on health sector performance.
- Effective HRH deployment in the health sector.
- Strategies for improving training for staff

- Workload assessment and its impact on health worker performance

6.8.4 Healthcare Service Delivery

- Equitable distribution of resources across different levels of the health care.
- Effective strategies for delivering health services in the context of limited resources.
- Effective models of PPP in the health care services
- Assessment of effectiveness and quality of services in the context of limited resources.
- Health system factors responsible for the unmet need for health services

6.8.5 Health Information System

- Strategies to enhance data collection mechanisms and utilization for program planning and implementation.
- Strategies for harmonization of HMIS and other data systems.

6.8.6 Medical Products and Technologies

- Determinants of medical and pharmaceutical products stockouts
- Assessment of supply chain management
- Rational utilization of medical and pharmaceutical products.
- Quality and content of medicines found in the formal and informal sector.
- Development and use of appropriate technologies
- Pharmacovigilance studies to monitor adverse drug reactions

6.9 Community System Strengthening

- Research on social determinants of EHP conditions and other emerging health issues;
- Perception of community members on communicable and non-communicable diseases and their impact on livelihood
- Explore and evaluate appropriate strategies for information, education and communication to influence positive behaviour change across diseases
- The interface between traditional and modern medicine
- The impact of immigration and emigration on health
- The interrelationships and policy implications between health and other social domains of human life.

- Factors that determine access to health services, especially in marginalised populations
- Community barriers that impede access to health care
- Effective strategies for increasing male involvement in women and child health programmes

7.0 IMPLEMENTATION OF THE RESEARCH AGENDA

The NHRA is the overarching guiding instrument for generating evidence that will be used in the health sector in order to inform the development of policies and health interventions. To ensure full implementation of the Research Agenda, there is a need for involvement of various stakeholders at both national and international levels in the design and execution of research. With the support of the legal tutelage of the National Commission for Science and Technology (NCST), the Ministry of Health as a sectoral ministry responsible for health care delivery, in partnership with stakeholders and the international community, will support and advance the objectives of the Agenda to ensure promotion, facilitation, co-ordination, development and management of research activities in Malawi with efforts geared towards addressing research activities in the identified priority areas.

While Government of Malawi appreciates the diversity of needs and interests of different stakeholders in health research, stakeholders are, however, called upon to ensure that research in Malawi is geared towards addressing the research priorities that have been outlined in this document during the period of the Agenda. It is therefore, expected that stakeholders will make deliberate efforts in conducting and supporting research in the identified priorities. Government resources will not be used in supporting research outside these priorities.

7.1 Stakeholders

Key stakeholders that are being called upon for the implementation of the Agenda include government Ministries with line functions that have bearing on determinants of health; academic institutions and their research centres of excellence, and affiliates; research institutions; the civil society organizations; private sector organizations; NGOs; INGOs; and international co-operating partners.

7.2 Coordinating Structures

Key coordinatory and regulatory structures and mechanisms for health research review and clearance in Malawi in the identified priorities shall remain the research and ethics committees (i.e. National Health Sciences Research Committee and College of Medicine Research and Ethics Committee that are existent in Malawi in respect of their

different jurisdictions and operating under the authority of the NCST). The Pharmacy and Medicines Board shall continue providing regulatory aspects of trials involving drugs and vaccines, while the NCST shall continue providing national co-ordinatory and regulatory services of all forms and types of health research including clinical trials.

7.3 Capacity Building, Transparency and Accountability

To ensure ownership in the design and execution of the NHRA, stakeholders' efforts aimed at fostering capacity building in the conduct and dissemination of research results by local researchers and research institutions will be promoted.

To mitigate implementation risks, any strategies or efforts by stakeholders geared towards achieving successful operationalisation of the Agenda will be fostered. Such efforts and strategies will revolve around the following;

- **Capacity risks:** promoting covering issues of human and financial resources, processes and systems in research;
- **Governance risks:** targeting ownership, decision-making, accountability, transparency and oversight in research;
- **Fraud and corruption risks:** fostering efforts and controls that fraud and corruption in health research.

8.0 FINANCING OF THE NATIONAL HEALTH RESEARCH AGENDA

Financing of research in the identified priority areas is critical for the realization of the goal and objectives of this Agenda. Stakeholders are, therefore, implored to support the financing of research geared towards addressing priorities outlined in this Agenda. The following mechanisms of financing this Agenda shall be pursued:

8.1 Government Funding

Government shall commit direct resources at various levels to support the undertaking of research in the identified priorities. The Ministry of Health shall be particularly proactive in leveraging support for resourcing this Agenda.

Drawing on experiences from other countries, the Government of Malawi shall establish a National Health Research Fund (NHRF). The NHRF shall be a pool of resources from the government and co-operating partners. This will be a basket funding for research in the identified priorities. The Fund shall be managed by the Ministry of Health with clear guidelines. A key advantage of the NHRF is that it has some potential to ensure sustainability of funding for research.

8.2 Research Grant Scheme

Researchers and all other stakeholders wanting to undertake research in the identified priorities shall be encouraged to take advantage of the existing national and international research grant schemes in health research. Several international grant giving organizations exist. These include WHO Special Programme on Training and Research on Tropical Diseases; National Institute for Health (NIH); Alliance for Research on Health Policy and Health System Research, Wellcome Trust, etc.

8.3 Public and Private Partnerships

Public and private partnerships shall be an important vehicle for nurturing resource mobilization for research in the priority areas. Researchers in public and private sectors shall be encouraged to pursue a spirit of collaboration in undertaking research. Deliberate efforts in cultivating corporate social responsibility to support the financing of the Agenda shall be encouraged and sought after by researchers at various levels.

9.0 DISSEMINATION OF RESEARCH FINDINGS

Research dissemination entails popularization of research results. Researchers shall ensure that scientific knowledge is communicated to a wider audience beyond the research community. Reporting of research and its results shall be the responsibility of every researcher and the research institution. The responsibility may be delegated to either the sponsor or any individual upon mutual agreement. Research communication shall entail expressed commitment to publish or disseminate the results within a specified period.

It is incumbent upon research institutions to promote multifaceted and comprehensive research communication to achieve high quality research dissemination. Institutions conducting health research shall have a responsibility for dissemination of research results to ensure that the results reach end-users. The researchers have a responsibility of publishing and organizing events for dissemination of research results.

All approved research studies shall have a component on dissemination of results. Institutions shall be required to establish budget lines for dissemination of research results. Institutions shall establish research data banks and repositories and compile annual directories of research in order to facilitate access and availability of research data and information for use by end-users.

The Ministry of Health and other coordinating institutions including the National Commission for Science and Technology shall ensure that Research Information is available for utilization at the national level by policy makers, communities, target populations, researchers and all other relevant stakeholders. It is, therefore, hoped that

the NHRA will stimulate interest that will generate research evidence in the identified priority areas.

10.0 MONITORING AND EVALUATION OF THE AGENDA

The tracking of the stakeholders' adherence to the Agenda shall be part and parcel of monitoring the Agenda implementation. The tracking will be informed by some tools/indicators as described below. This tracking shall benchmark the review of the Agenda.

10.1 Tools for Tracking Adherence to the Agenda

10.1.1 Checklist for Submission of Review of Research Protocols

NHSRC and COMREC Checklists for submission of protocols for ethical review shall contain an element of whether the study is addressing any of the priority areas.

10.1.2 Catalogue of Protocols Developed from the Priority Areas

Using the database of the NHSRC, COMREC and institutional databases, the MOH in collaboration with the NCST shall compile catalogues of approved protocols of studies addressing the priority areas.

10.1.3 Monitoring and Evaluation (M&E) Reports

NHSRC and COMREC shall be supported to be undertaking M+E visits to sites where the approved studies are being conducted.

10.1.4 Progress and Final Reports

Progress and final reports shall be submitted to an ethics committee that approved the study as per its stipulated guidelines and standard operating procedures. At the end of the research study, final report shall be deposited with the ethics committee that approved that study with copies submitted to NCST and MOH.

10.1.5 Database and Directory of Research Studies

Final reports of studies deposited with MOH, COMREC and NCST shall be used to compile database and directories of approved research studies.

10.2 Review of the Agenda

This Agenda has a lifespan of five years in line with the HSSP. Informed by emerging issues in health and the above stated indicators for tracking the stakeholders' adherence to the implementation of the Agenda, there would a midterm evaluation followed by a final review of the Agenda after five years.

11.0 LIST OF SOURCE MATERIALS

In drafting this Agenda, the following documents were used as source materials:

1. SADC Regional HIV and AIDS Research Agenda-SADC/HM/1/2008/5
2. HIV/AIDS Research Strategy for Malawi (2005-2007)
3. Health Research Agenda for the 21st Century: Country Perspective (Indonesia)
4. National Unified Health Research Agenda for Philippines 2008-2010
5. Priority Areas for Research in Population and Development- September 2009
6. Consultancy Reports of the Gap Analysis Studies: NCST/HRCSI 2010
7. Health Sector Strategic Plan 2011-2016
8. Priority Setting for Health Research: Toward a management process for low and middle income countries; Philippines, South Africa, Brazil, and Netherlands; Council on Health Research Development (COHRED); Working Paper 1 (2006)
9. The Algiers Declaration: Ministerial Conference on Research for Health in the African Region- Narrowing the knowledge gap to improve Africa's health; 23-26 June 2008
10. National Health Sciences Research Committee General Guidelines on Health Research- December 2007
11. The 10/90 Report on Health Research 2000: Global Forum for Health Research (April 2000)
12. Systems Thinking for Health Systems Strengthening: Alliance for Health Policy and Systems Research-WHO 2009
13. Health Systems: Improving Performance-World Health Report 2000 (WHO 2000)
14. National Health Priority Areas Report: Mental Health: A report focusing on Depression: Commonwealth Department of Health and Aged Care- Australian Institute of Health and Welfare-1998
15. Tanzania: National Health Research Priorities 2006-2010
16. 2nd National Conference on Priority Setting for Health Research Report. Department of Health, 2006: Pretoria, South Africa
17. Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and their Measurement Strategies: WHO 2010
18. Draft Health Policy, Ministry of Health, 2010)
19. Malawi Growth and Development Strategy (1 & II)
20. Guidance Note on Operational Risk Assessment Framework (ORAF); Risk to Achieving Results; World Bank 2010
21. The Millennium Development Goals for Health: Rising to the Challenges; IBRD/The World Bank, 2004

ANNEX 1: NATIONAL TASKFORCE, DRAFTING COMMITTEE AND THE SECRETARIAT

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