Ministry of Health

NATIONAL HEALTH RESEARCH AUTHORITY

COVID-19 Research and Innovation Plan for Zambia

SETTING THE DIRECTION FOR EVIDENCE BASED DECISION MAKING DURING DESEASE EPIDEMICS

March 2020

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Contents

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Foreword

The Government of the Republic of Zambia through his Excellence Dr. Edgar Chagwa Lungu has placed great priority on research evidence to inform its transformative health agenda. This evidenced by the establishment of the National Health Research Authority (NHRA) through Act No.2 of 2013 to coordinate, regulate, promote and finance research.

In the wake of the Coronavirus disease 2019 (COVID-19) pandemic, the Ministry of Health through the Zambia National Public Health Institute has mounted a Multi-Sectoral Response involving all government line ministries, cooperating partners, non-governmental organizations, civil society, private sector and all Statutory Boards under the Ministry of Health. Each of the Statutory Boards in the Ministry of Health is playing key roles in the response to the COVID-19 pandemic. One of the key strategic areas of Zambia's response is adducing evidence for decision-making. This response is being facilitated by the National Health Research Authority, which has come up with this Research and Innovation Plan. This Plan is of paramount importance as it demonstrates Zambia's resolve to join the world in finding answers to the pandemic while at the same time positioning itself to learn from research outputs being generated in the world.

Zambia appreciates the leadership taken by the World Health Organization (WHO) to develop the Global Research Roadmap for COVID-19 and has therefore decided to contribute to the Global Research agenda on this global health security threat.

Among the main objectives of this Plan is to mobilize financial, technical and material resources to facilitate evidence generation and dissemination on COVID-19. I therefore wish to sincerely appeal to the cooperating partners, both bilateral and multilateral, as well as the private sector, and all well-wishers to contribute to this call. The NHRA is establishing a COVID-19 Special Research Fund Account to raise resources to support priority COVID-19 research activities.

Lastly but not the least, let me thank the NHRA Council and Management for developing this important document.

Dr. Chitalu Chilufya, MP
Minister of Health

Preface

This National COVID-19 Research and Innovation Plan is Zambia's research response plan towards the COVID-19 Pandemic. It aims to mount a coordinated research response to the Pandemic while at the same time set in place a system to research responses to any future health threats.

The plan puts together Zambia's top scientists and research institutions for a coordinated research response towards this Pandemic. The plan directly rides on the World Health Organization (WHO) Global Research Roadmap 2020, highlighting immediate, mid-term and longer-term priorities to build a robust global research response. The Roadmap alludes to the fact that 'there is broad consensus on the need for research to focus on actions that can save lives now and to facilitate action so that those affected are promptly diagnosed and receive optimal care; while integrating innovation fully within each research area.' The WHO Research roadmap also states that there is need to support research priorities in a way that leads to the development of sustainable global research platforms pre-prepared for future diseases epidemics; thus allowing for accelerated research, innovative solutions and research and development of diagnostics, therapeutics and vaccines, as well as their timely and equitable access for those at highest risk. The Zambian Research and Innovation Plan has the same concept and similar objectives.

In spite of the Plan having been developed in an emergency situation, due care was taken to consult as many stakeholders as possible in order to ensure ownership and support. The Plan is also a living document, subject to revision as the epidemic evolves.

Lastly, on behalf of the NHRA Council, I wish to add my appeal to that made by Hon Minister of Health to Cooperating Partners to support this Plan by providing both Technical and Financial resources for its implementation.

Prof Bellington Vwalika
Council Chairperson, NHRA

Acknowledgements

On behalf of the management of the National Health Research Authority, I wish to express my sincere thanks and gratitude to the Government of the Republic of Zambia through the Ministry of Health for creating a favourable research environment in Zambia.

I am grateful to the members of the Research and Development Committee of the NHRA Council and the Council members for their overall leadership and support to the NHRA Management as it developed this important document. I would like to sincerely thank all the stakeholders who specifically gave input into this document. I list of all the stakeholders that we consulted is given in Annex 1 to this document. I wish to pay special recognition to the following individuals and their institutions for their direct inputs into this document:

1. Dr. Gershom Chongwe, Director for the Tropical Diseases Research Centre
2. Dr. Phillimon Ndubani, Managing Director for the Macha Research Trust
3. Dr. Roma Chilengi, Chief Scientific Officer, Centre for Infectious Diseases Research in Zambia
4. Dr. Izukanji Sikazwe, Chief Executive Officer, Centre for Infectious Diseases Research in Zambia
5. Prof Mubiana Macwan'gi, Professor of Public Health, University of Zambia, Institute for Economic and Social Research.
6. Prof Helen Ayles, Director of Research, ZAMBART
7. Dr. Alwyn Mwiinga, Chief Executive Officer, ZAMBART
8. Dr. Ginny Bond, Deputy Director, Social Sciences, ZAMBART
9. Dr. Kwame Shanaube, Deputy Director of Research, Quantitative, ZAMBART
10. Dr. Musonda Simwinga, Deputy Director of Research, Qualitative, ZAMBART
11. Dr. Henry Njapau, National Institute for Industrial and Social Research
12. Dr. Fred Banda, Chief Veterinary Officer, Central Veterinary Research Institute (CVRI)
13. Dr. Paul Fandamu, Deputy Director, Research and Epidemiology, CVRI
14. Dr. Mwansa Songe, Aquatic Animal Health Specialist, Central Veterinary Research Institute
15. Dr. Lawrence Mwananyanda, Chief Scientific Officer, Right to Care Zambia
16. Ms. Maureen Stickel, Associate Director, IDinsight

I would like to pay special recognition to the World Health Organization (WHO) for the technical guidance that we received in the development of this document. A lot of the information in this Plan was either directly or indirectly derived from the WHO document entitled, “A coordinated Global Research Roadmap.”

Prof Godfrey Biemba
Director and CEO, NHRA

Chapter 1: Background and context

One of the key mandates of the National Health Research Authority (NHRA) as provided for under the Health Research Act No. 2 of 2013 of Zambia is to identify and prioritize areas for health research and advise the Minister, who shall recommend the priority areas to Cabinet for approval as national health research priority areas to be incorporated into the national health research strategic plan. Because the National Health Strategic Plan (NHSP) was developed before the National Health Research Priorities were identified, the National Health Research Authority critically analyzed the public health and health systems priorities in the NHSP and identified research priorities in line with the national health priorities and developed the National Health Research Agenda for the period 2018-2021.

The Health Research Act of 2013 provides clear criteria for identifying priorities for health research, and in line with the Act, the NHRA, in developing this National Health Research Agenda, took into consideration the following:

(a) The burden of disease in the country;
(b) The cost effectiveness of interventions aimed at reducing the burden of disease;
(c) The availability of resources for the implementation of an intervention at the level closest to the affected communities;
(d) The health needs of special groups;
(e) The health needs of communities;
(f) Emerging public health problems.

The Health Research Agenda also provided for Public Health Emergencies or disease outbreaks, under the Section 3.1.6 *Disease outbreaks and epidemic control*. In this document, the following research priority areas were identified:
1. A national outbreak risk mapping study
2. A review of the national outbreak responses over a five-year period
3. Molecular analysis of isolates from cases during outbreaks over a period of five years
4. Innovative research, aimed at providing evidence for preventing and responding to epidemics.

With the above in mind, the NHRA in the face of the Coronavirus pandemic has been prompted to join others in the global response to supporting the National Government with evidence that can

guide steps for prevention and control of the outbreak. The response by NHRA is very much in line with the guidance by the World Health Organization (WHO).

Severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV) are two highly transmissible and pathogenic viruses that emerged in humans at the beginning of the 21st century[1]. The source of the recent coronavirus is believed to be in Wuhan region of China where both dead and live animals including fish and birds were sold. The virus has since spread across the world with a total of 184,976 cases reported and 7,529 deaths affecting 159 countries as at March 17, 2020 at 16:00 CET [1].

In view of the current trend of the disease, on 11 March 2020 the World Health Organization (WHO) declared the Coronavirus disease (COVID-19) a pandemic, which requires extreme vigilance in all health sectors. As of 25th March 2020, Zambia had 12 confirmed cases of COVID-19.

As part of the response to this Pandemic, the World Health Organization (WHO) has developed a Research and Development Blue Print (Powering Research to Prevent Epidemics) called "A Coordinated Global Research Roadmap." To implement this Roadmap, WHO has proposed three Strategic Approaches:

1. A Global Research Roadmap with defined timelines and accountability;
2. National research plans at the core of research agenda;
3. Coordinated implementation of critical research (using core generic protocols when possible).

In line with this Global Research Strategy and in line with its statutory mandate of advising the Minister on all matters related to health research, as well as its mandate of promoting and coordinating health related research for the country, the National Health Research Authority (NHRA) decided to develop this COVID-19 Research and Innovation Plan for Zambia in consultation with key research stakeholders which included representatives from research and academic institutions as well as the Ministry of Health and Ministry of Higher Education. The full list of stakeholders consulted is in Annex 1.

Chapter 2: Objectives of the covid-19 research priority setting

2.1 Overall Objective

The overall objective of the Plan is to have a nationally coordinated response to the COVID-19 pandemic and set a platform for research response to any future health emergencies. The plan aims to:

a) Facilitate a Zambian coordinated research response to COVID-19;
b) Mobilize resources for COVID-19 research in a coordinated manner.

2.2 Specific Objectives

The specific objectives of the Plan are:

a) Facilitate mobilization of finances and other resources for the conduct of locally relevant and priority health research on COVID-19
b) Align health research outputs with the national health research priorities for the outbreak
c) Guide researchers, policy makers, program implementers, academic institutions, health development partners and other stakeholders on health research priorities for COVID-19
d) Provide a guide for national health research activities to address national health research gaps and needs on COVID-19
e) Provide a Platform for a coordinated research response to COVID-19
f) Analyze, document, package, and disseminate research evidence on COVID 19 for evidence-based decision-making

Chapter 3: The national COVID 19 research priorities for Zambia

3.1 Research Knowledge Gaps

Globally, WHO has identified the following Knowledge Gaps, which are categorized into eight thematic areas:

a) Animal species
b) Disease spectrum
c) Immunity and vaccination
d) Public mental well-being
e) Disease transmission
f) Therapeutics and care interventions
g) Health care worker risks
h) Ethical considerations.

Gap area (a) will assess the species of animal which the virus originated (animal reservoir); the species of animal leading to human infection (intermediate host); various modalities of animal to human transmission; and risks resulting from animal trade or consumption (food safety).

Gap area (b) will focus on the spectrum of the disease from a clinical perspective; groups most at risk of higher disease severity; pathophysiology of severe disease; prognosis pertaining to viral loads; antibody dependent enhancements to infection; and animal models that mirror those of human disease. From the Zambian perspective, the gap will also encompass risk factors for re-infection and clinical outcomes for severe disease. Another gap is the inter-relationship between COVID and chronic diseases such as TB and HIV in terms of severity and clinical outcomes.

Gap area (c) will analyze immunity and vaccination to the disease specifically looking at the various aspects of immunity such as strength of immunity and cellular immunity; post vaccination effects; animal models for vaccines and vaccine-enhanced disease; assays for assessing immunity response to the disease; and late-phase clinical trials to test vaccines.

Gap area (d) looks at the mental well-being of the communities including fears, anxieties, rumors, and stigmas; and how to encourage uptake and adherence of public health measures.

Gap area (e) will look at methods by which person to person transmission of the disease occurs as well as how this is impacted by age group; pre- or asymptomatic transmission; environmental factors related to increased transmission; and virus replication.

Gap area (f) will focus on therapeutics and supportive care strategies; and clinical trials related to post-exposure prophylaxis contexts.

Gap area (g) will assess all risks faced by health care workers; how to support health care workers; and methods of safe care delivery such as isolation and quarantine.

Gap area (h) will analyze ethical questions related to research of vulnerable populations and the disease; as well as methods of community sensitization.

Addressing specific research questions within these eight thematic knowledge gaps will allow the country to both prevent and/or slow the spread of the COVID-19 and any other future disease outbreaks.

3.2 Key National Research Actions

As an evolving pandemic specific issues will arise that will require specific scientific interrogation and specific research questions will then be crafted. In the meantime, this plan proposes the following broad priority research focus areas:

a) Conduct studies to develop point of care diagnostics
b) Conduct studies that aim to discover the most effective preventive measures for COVID-19
c) Conduct studies that aim to discover the most effective treatment for COVID-19
d) Conduct studies to evaluate the management and outcomes of COVID-19 from affected countries.

More specifically, there are a number of research areas that target a range of knowledge gaps highlighted above. Below are some of the specific research actions being proposed:

a) Mobilize research on rapid point of care diagnostics for use at the community level.
b) Assess available data to learn what standard of care approaches from China and elsewhere and policy decisions are most effective; engaging with Africa wide platforms and initiatives (e.g. Africa CDC, modelling initiative, role of national institutions in preparedness).
c) Evaluate as fast as possible the effect of adjunctive and supportive therapies.
d) Forecast the impact on health systems and health workers.
e) Conduct epidemiological and economic studies to better understand the risk factors for severity/mortality of disease, impact of control measures and economic consequences.
f) Optimize use of protective equipment and other infection prevention and control measures in health care and community settings and the capability of local responses and stakeholders to help manage to contain the virus.
g) Review all evidence available to identify animal host(s), to prevent continued spill over and to better understand the virus transmissibility in different contexts over time, the severity of disease and who is more susceptible to infection.
h) Accelerate the evaluation of investigational therapeutics and vaccines by “Master Protocols.”
i) Maintain a high degree of communication and interaction among funders so that critical research is implemented.

j) Broadly and rapidly share virus materials, clinical samples and data for immediate public health purposes.
k) Conduct social research to better understand community response to preventive and health promotion measures (perceptions and experience), stigma related to COVID-19 and how best to improve disease prevention and health promotion messaging.
l) Conduct social research to document the social and economic impact of COVID-19 and associated public health measures and government policy on households in urban and rural areas of Zambia.
m) Analyze, document, package, and disseminate research evidence on COVID 19 for evidence-based decision-making.

These key actions are a comprehensive list that address all levels of an epidemic effect from community and hospital level to the role of funders in research. As stated earlier in this document, innovation should be fully integrated within each research area.

Focusing the research agenda on prevention measures will provide the necessary data for interventions that would reduce or stop the spread of COVID-19 and any other future epidemic disease. Accelerating quality and well-coordinated research in Zambia will help address the number of research gaps that exist when dealing with global epi- and pandemics. As Zambia sets its research agenda, it will require continental and global collaboration with all research institutions in order to foster cross-cutting research to prevent the worsening of COVID-19 and any future disease outbreaks.

Chapter 4: Strategy

4.1 Set up a team of Research Experts

In order to implement the key research priorities on COVID 19, Zambia will collectively and with support of co-operating partners work to strengthen the research environment in terms of individual human capacity and research infrastructure (e.g. laboratory, ICT) and research coordination. NHRA will coordinate the research response. In terms of research human resource, NRA will set up a panel of experts in the following fields:

a) Pharmacy/Pharmacology
b) Epidemiology and Biostatics, including experts in mathematical modelling
c) Public/Community health/Food Safety
d) Environmental Health
e) Veterinary Medicine
f) Clinical care
g) Behavioural and Social Sciences
h) Infectious Diseases
i) Biomedical Sciences
j) Implementation Science Research

4.2 Identify and assign specific Research Laboratories to support the research plan

In terms of infrastructure development, the country has a number of laboratories that can be used for research on COVID-19. However, there is need to learn from countries such as China that have so far made progress in research on the disease. NHRA will rely on the following laboratories to support COVID 19 research:

a) Central Veterinary Research Institute (Virology Laboratory)
b) UNZA Veterinary laboratories
c) UTH Virology and other labs
d) TDRC Laboratories
e) CIDRZ laboratories
f) ZAMBART
g) MACHA Research Trust
h) ZEHRP
i) NISIR Herbal Medicines Laboratory (Pilot Plant)
j) NISIR Mycotoxicology laboratory

4.3 Improve the Research Regulatory Environment to quickly clear Research Protocols on Investigational Drugs, Diagnostics, Vaccines, and other studies.

The conduct of research in settings affected by global disasters such as the COVID-19 is challenging, particularly when infrastructures and resources are already limited pre-disaster. However, since post-disaster research is essential to the improvement of the humanitarian response, Zambia has picked critical lessons from other countries already fighting the scourge and it is important that adequate research ethics oversight be available. In light of the above, all research regulatory bodies within the country have to take a comprehensive and fast approach towards COVID-19. NHRA in 2018, provided guidance for dealing with research during emergence/outbreak situations. Each arm of the research regulatory framework has a role to play to ensure improved turnaround time. NHRA therefore provides the following guidelines:

a) Research Ethics Committees: Prioritize review of research related to COVID-19 and offer prompt response of not more than three working days.
b) National Health Research Ethics Board (NHREB): Quick response to high-risk protocols related to COVID-19 and offer prompt response of not more than three working days.
c) Zambia Medicines Regulatory Authority (ZAMRA): Quick response to clinical trials on vaccines or drug development related to COVID-19 and offer prompt response to clinical trials of not more than seven working days.
d) National Biosafety Authority (NBA): Some product for research particularly vaccines may contain genetically modified organisms and will/may require accelerated approval within a period of no more than seven working days.
e) National Health Research Authority: Expedited processes for clearing research in line with the emergency.

The above measures will ensure that Research Protocols submitted for ethical clearance by RECs and authority to conduct research by the NHRA are cleared within Seven (7) days. This includes requests for exportation of Biological materials.

Please note that the National Health Research Act No. 2 of 2013, Part VI, Section 50, Sub-section (1) stipulates, “a person shall not export or import biological materials without the prior written approval of the Authority;” and subsection (2) states, “the Authority may, on the recommendation of the Board, permit the export or import of biological materials if all the prescribed elements of a material transfer agreement are met.” There are currently no exceptions for exportation of biological materials in emergency situations. NHRA, through NHREB will expedite clearance of

Material Transfer Agreements (MTAs) within three working days as long as there is an approved Protocol.

4.4 Set up a COVID 19 Special Research Fund.

NHRA is setting up a COVID 19 Special Research Fund, which will enable researchers in Zambia to conduct priority research to respond to the outbreak. This will facilitate research around COVID 19 for researchers and research institutions that do not have adequate funding. A funding mechanism will be developed by the Research and Development Committee of the NHRA Council.

Funding is critical to the success of all research efforts for COVID-19. With this in mind, WHO has mobilized the donor community to financially support the global research roadmap. And the Global community has responded affirmatively as can be seen from the statement by Yazdan Yazdanpanah, Chairperson of the Global Research Collaboration for Infectious Disease Preparedness and Response (GLOPID-R): *"This Global Research Forum allowed us to identify the main urgent priorities for research. As a group of funders, we will continue to mobilize and coordinate to ensure support is in place for all critical research needed to tackle this crisis and stop the outbreak in partnership with WHO."*

According to WHO and GLOPID-R, the following actions are needed:

a) A coordinated funding system to prepare and respond to epidemics more effectively.
b) Funding that focuses primarily on identified research priorities, avoids silos and unhealthy competition, and encourages multidisciplinary collaboration.
c) Improved coordination for the launching of emergency funding calls.
d) Considering simplification and use of generic application forms.
e) Issuing of grants which includes clauses that promote timely sharing of research data relevant to the outbreak response.
f) Regularly convening funders to facilitate coordination of efforts and transparent information exchanges via the Global Coordination Mechanism (GCM) of the WHO R&D Blueprint.

GLOPID-R is coordinating funders to optimize resources, avoid duplication, cover priorities listed in the R&D Blueprint research roadmap and, contribute to the Global Coordination Mechanism (GCM).

In line with the above global guidance, NHRA will coordinate fund raising and management of COVID 19 research resources to optimize the resources, avoid duplication, cover the national research priorities on COVID-19.

Suffice to re-state that the international community has responded to the call for financial resources to support COVID-19 research, for example, the European Commission has scaled up research funding for COVID-19 and selects 17 projects in vaccine development, treatment and diagnostics. It had an initial budget of €10 million mobilized from the special fund for emergency research of the Horizon 2020 programme for research and innovation. The Commission received 91 proposals within the very short two-week deadline. These projects are working in the following key components:

i. *Development of new vaccines*. The research will focus on developing a prophylactic vaccine and a therapeutic vaccine, which will be used for prevention and treatment respectively.
ii. *Rapid point-of-care diagnostic tests*. Increased efforts will concentrate on enabling front-line health workers to make the diagnosis more quickly and more accurately, which will in turn reduce the risk of further spread of the virus.
iii. *New treatments*, in which a dual approach will be adopted. Firstly, accelerating the development of new treatments currently in the pipeline (including therapeutic peptides, monoclonal antibodies and broad-spectrum antivirals), and secondly, screening and identifying molecules that could work against the virus, using advanced modelling and computing techniques.
iv. *Improving epidemiology and public health*, including our preparedness and response to outbreaks. These projects will help develop better monitoring systems in order to effectively prevent and control the spread of the virus, as well as contribute to the assessment of social dynamics

Several EU-funded projects are already contributing to preparedness and response to the COVID-19 outbreak, such as the European Virus Archive - GLOBAL (EVAg), the PREPARE project and the Commission involvement in the Global research collaboration for infectious disease preparedness (GloPID-R) network.

In addition, the Wellcome Trust in collaboration with the UK Department for International Development (DFID) through the Joint Initiative on Research in Epidemic Preparedness and

Response to help low- and middle-income countries prepare for and tackle epidemics has opened applications for funding.

4.5 Set up a COVID-19 Research and Development Portal on NHRA website to communicate both Zambian and Global evidence as it unfolds.

In order to effectively disseminate research evidence on COVID-19, NHRA will create a Research Portal on its website that will be linked to WHO and other key health research sites.

Evidence-based decision-making involves integrating the best available research evidence with contextual factors including community preferences, local issues (e.g., health, social), political preferences, and public health resources to inform policy and practice. Knowledge generated through health research has the potential to improve health outcomes, promote service delivery and strengthen health systems functioning. Therefore, NHRA will coordinate efforts aimed at:

a) Harnessing data on COVID-19 for knowledge translation and informed decision-making processes in Zambia and abroad;
b) Communicating identified data and solid evidence for policy consideration;
c) Timely updates on newly gathered research evidence in collaboration with the Zambia National Public Health Institute to inform the public through the Ministry of Health.

Annex 1 List of People and Institutions Consulted

1. Dr. Kennedy Malama, Permanent Secretary Technical Services, Ministry of Health (MOH), Zambia
2. Dr. Nathan Nsubuga Bakyaita, World Health Organization Country Representative, Zambia
3. Prof Victor Mukonka, Director, Zambia National Public Health Institute
4. Dr. Rosemary Sunkutu, Senior Population, Health and Nutrition Specialist, World Bank
5. Mr. Paul Chishimba, Director Monitoring and Evaluation, MOH
6. Dr. Abel Kabalo, Director, Health Promotion, Disease Prevention and Social Determinants, MoH
7. Dr. Andrew Silumesi, Director, Public Health and Research, MoH
8. Prof Bellington Vwalika, Chair, NHRA Council as well as UNC Global Projects, LLC Zambia representative
9. Ms. Mwenya Kaela Bwalya, Vice Chairperson, NHRA Council
10. Dr. Chipepo Kankasa, member of NHRA Council and Director for the Pediatric Centre of Excellence, UTH, Lusaka
11. Dr. Lawrence Chanza, member of NHRA Council and Naturopathic Physician

12. Dr. Panganani Njobvu, member of NHRA Council
13. Ms. Atridah Mulonga, member of NHRA Council
14. Dr. Izukanji Sikazwe, member of NHRA Council and Director of CIDRZ
15. Mrs. Mercy Chiluba Munoni, member of NHRA Council
16. Dr. Mabvuto Katwizi Kango, member of NHRA Council and Director of AIDS Healthcare Foundation
17. Dr. Dhally Menda, member of NHRA Council and Director of Programs at Churches Health Association of Zambia (CHAZ)
18. Dr. Mwansa Songe, member of NHRA Council
19. Dr. Phil Thuma, Scientific Director, Macha Research Trust
20. Mr. Edmond Mwakalombe, member of NHRA Council
21. Dr. Kunda Musonda, Head, Laboratory Systems and Network, Zambia National Public Health Institute
22. Dr. Busiku Hamainza, Epidemiologist, National Malaria Elimination Centre, Zambia
23. Dr. Mwaka Monze, Head, UTH Virology
24. Dr. Alex Makupe, Director Clinical Care, MoH/UTH
25. Prof Hellen Ayles, Research Director, ZAMBART
26. Prof Michelo Charles, Dean, UNZA School of Public Health
27. Prof Lloyd Mulenga, MoH/UTH
28. Dr. Alwyn Mwiinga, Director and CEO, ZAMBART
29. Mr. Lackson Tonga, Registrar, National Biosafety Authority
30. Dr. Henry Njapau, Acting Director, National Institute for Scientific and Industrial Research (NISIR)
31. Dr. Alfred J. Sumani, Executive Secretary, National Science and Technology Council (NSTC)
32. Prof. Patrick Musonda, Chairperson, National Health Research Ethics Board (NHREB)
33. Ms. Bernice Mwale, Director General, Zambia Medicines Regulatory Authority (ZAMRA)
34. Dr. Gershom Chongwe, Director, Tropical Diseases Research Centre (TDRC)
35. Dr. Roma Chilengi, Chief Scientific Officer, Centre for Infectious Diseases Research in Zambia (CIDRZ)
36. Dr. Lawrence Mwananyanda, Chair of the Scientific Committee, Zambia Medical Association (ZMA) and Chief Scientific Officer, Right to Care Zambia

37. Prof Mubiana Macwan'gi, Professor of Public Health University of Zambia (UNZA) Institute for Economic and Social Research (INESORE)
38. Dr. Phillimon Ndubani, Managing Director, Macha Research Trust
39. Dr. Fred Banda, Chief Veterinary Officer, Central Veterinary Research Institute (CVRI)
40. Dr. Paul Fandamu, Deputy Director, Research and Epidemiology, CVRI
41. Dr. Ngonda Saasa, UNZA Veterinary Department
42. Dr. Edgar Simulundu, UNZA Veterinary Department
43. Ms. Maureen Stickel, Associate Director, IDinsight
44. Prof Helen Ayles, Director of Research, ZAMBART
45. Dr. Ginny Bond, Deputy Director, Social Sciences, ZAMBART
46. Dr. Kwame Shanaube, Deputy Director of Research, Quantitative, ZAMBART
47. Dr. Musonda Simwinga, Deputy Director of Research, Qualitative, ZAMBART