COVID-19 IN MALAWI: PROCEEDINGS REPORT OF EXTRAORDINARY THINK-TANK MEETING ON COVID-19 HELD ON 21ST MAY 2020

Abstract

Introduction

COVID-19 has become a global crisis affecting all the countries in the world spreading rapidly and causing numerous deaths. Malawi registered its first case on 2nd April 2020 and since then the number of cases has risen to 1342 by 30th June 2020, with 271 recoveries and 16 deaths. To contribute to the national response, the Health Economics and Policy Unit (HEPU) at the University of Malawi College of Medicine organized an extraordinary Think-tank meeting where academics/researchers and policy-makers presented and reviewed evidence on COVID-19 from across various disciplines. This report presents proceedings of the COVID-19 Think-tank meeting including reflections on potential considerations to improve the response effectiveness.

Objectives

With the COVID-19 situation worsening, the meeting aimed to 1) review and build consensus on available epidemiological models, 2) disseminate evidence on impact of COVID-19 on the health system and economy, 3) discuss potential high-impact interventions for mitigating morbidity and mortality on high-risk and vulnerable groups and 4) bring to attention materials for potential health messaging for communities.

Methodology

HEPU organizes at least 8 evidence interface meetings (4 Thinktank and Policy Lab meetings each year) with health policy makers to identify and prioritise research for policy through the Thanzi la Onse project led by the University of York. This extra-ordinary meeting expanded the participation by including representatives including technical departments from the MOH, development partners, other academic institutions other than the Thanzi la Onse Partners, and the National Planning Commission.

Results

The results from epidemiological COVID-19 modelling work showed how the virus is spreading and the projection of the impact of the pandemic should prevention measures be neglected. Evidence showed that a strict lockdown would effectively reduce the spread of the disease. Presentation on public health implications and messaging focused on global COVID-19 control strategies and impact, opportunities and challenges of testing Corona Virus, contact tracing, community shielding of the elderly, and public health messaging. The evidence showed that shielding the elderly would reduce their risk of being infected with coronavirus and significantly reduce the projected number of deaths and cases with severe illness. The discussion on the impact of COVID-19 on Malawi's Economy, Nutrition status and Psychosocial status showed that further restrictions will hit the economy in significant ways.

Recommendations

Recommendations from the meeting emphasized the need for interventions that 1) protect the health system 2) protect high-risk and vulnerable populations from further infections and mortality, 3) expand and strengthen social protection mechanisms, 4) build resilience of the economy from the COVID-19.

1 Introduction

COVID-19 was declared a national disaster in Malawi on 20th March 2020. The first confirmed case was reported on 2nd April and ever since, the number of confirmed cases has been increasing within the country with 1342 people confirmed to have the disease and causing 16 deaths as of 30th June 2020. Of the 1342 cases, 640 were imported and 639 were local transmissions while 63 were still under investigations. With only 271 cases successfully recovering from the disease, 1055 cases were thus still active. The situation is expected to worsen given the continued rise of the number of newly infected cases. At the speed at which the disease is spreading, responsive evidence to inform interventions is urgently required to inform policy options.

The Health Economics and Policy Unit (HEPU) under the School of Public Health and Family Medicine at the College of Medicine, University of Malawi, with support from the Thanzi La Onse Program, was established in October 2018 a body to provide evidence to inform decision making and policy in the health system. Within the HEPU is a Health Economics, Policy and Ethics Think Tank and Policy Lab which brings together policy makers, researchers and other stakeholders to think together to ensure that decision and policy making is based on evidence.

COVID 19 has become a global problem affecting all the sectors. The HEPU thus organized a virtual National Extraordinary Think Tank meeting on COVID-19, which took place on 21st May 2020. The aim of the meeting was to bring together policy makers, decision makers, researchers and development stakeholders to share available evidence on the impact of COVID-19 in Malawi from various perspectives in order to inform decision making and planning for Malawi's COVID-19 response.

The meeting was well attended with up to 67 participants from different sectors that govern the country, local and international universities and research institutions. Among the participants was the Chairman of the COVID-19 President Taskforce and Dean of the school of Public Health and Family Medicine, The Director of The National Planning Commission, the Director of Quality Management within the Ministry of Health, the Director of Public Health Institute of Malawi within the Ministry of Health, the Chairperson of the University of Malawi COVID-19 Taskforce and Vice Principal of the College of Medicine (COM), the Chairperson of the COM COVID-19 taskforce, the Director of the Health Economics and Policy Unit (HEPU), the Director of AFIDEP, the Thanzi La Onse secretariat, Senior researchers from Malawi Liverpool Welcome Trust, Directors from the Civil Societies (DFID, GIZ, UNICEF, UNESCO) and other distinguished members from the mentioned institutions (Appendix 1).

This report synthesizes evidence presented at the Think-Tank meeting, provides policy recommendations to inform the COVID-19 response in Malawi, and provides areas for further investigation. The evidence is drawn from 11 presentations which focused on 3 main themes: 1) Epidemiological modelling; 2) Public Health implications and messaging; and 3) Economic and Psychosocial aspects of the pandemic.

2 Synthesis of Evidence presented

2.1 Epidemiological Modelling of COVID-19 in Malawi

Two presentations by Tyler Smith (Cooper/Smith) and Dr. Tara Mangal (Imperial College London) shared projected trends in COVID-19 infections, hospitalizations, and deaths in Malawi based on several mathematical models that were developed.

The Mathematical model developed by MOH Kuunika programme, in collaboration with Cooper/Smith, and the Imperial College London (ICL) Global Impact of COVID-19 Model both utilized the Susceptible-Exposed-Infected-Recovered (SEIR) model structure and model parameters adapted from data collected

in China, Europe and North America due to limited clinical data from Malawi. Considering that age is the greatest predictor for poor COVID-19 outcomes and Malawi has a young age structure, both models suggest that Malawi may experience lower proportions of hospitalized cases and lower fatality rate of COVID-19 than high income settings with older populations. However, the high prevalence of certain comorbidities, such as HIV, TB and malaria may mitigate such effects.

Furthermore, the models explored how different policies and interventions, ranging from having no mitigation measures to a strict country-wide lockdown, could impact the disease trajectory in Malawi. The results of the Kuunika model showed that without any mitigation measures, 16 million infections are expected. The same model also predicts that with the current policies (i.e. social distancing, rotational work schedules, transit vehicle limits, self-quarantine for returning travellers and restriction of gatherings to 100 people), 1.7 million infections could be averted, whereas implementation of a strict country-wide lockdown could avert up to 15.5 million infections (Figure 1).

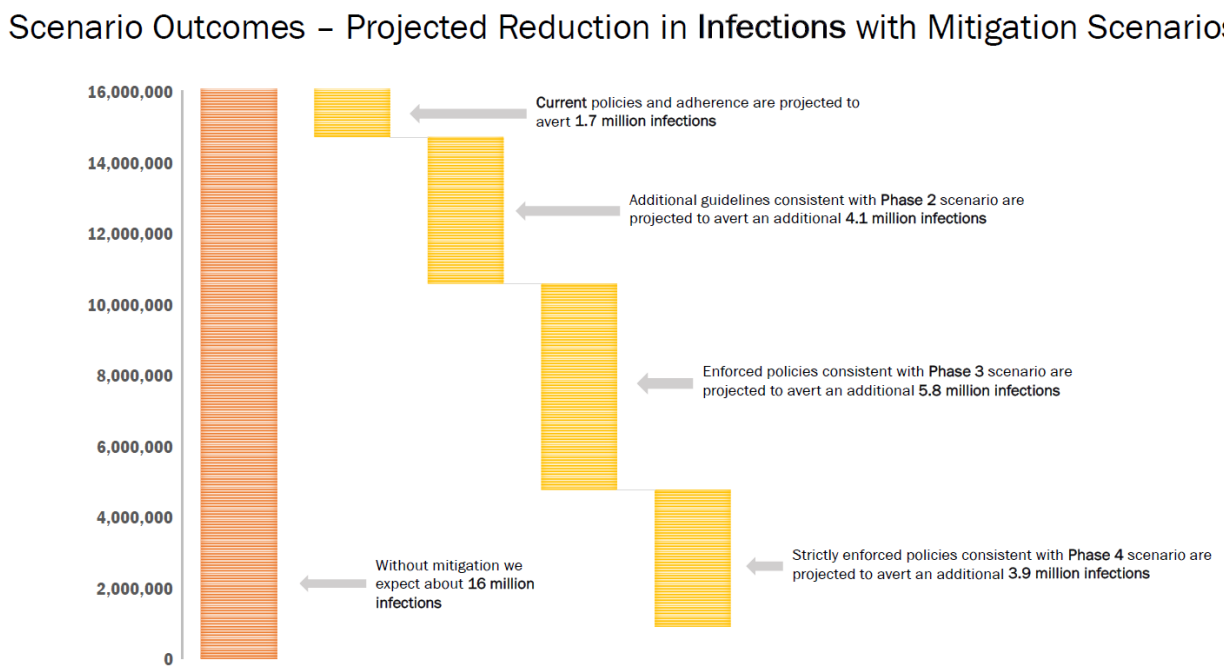

Figure 1: Projected Reduction in Infections with Mitigation Scenarios (MOH Kuunika,2020)

Furthermore, the Kuunika model predicts that under current policies, COVID will be worst in Malawi's most populous districts, with Lilongwe rural expected to have the highest number of COVID-19 infections and deaths at 1,400,000 and 4,500, respectively (Figure 2).

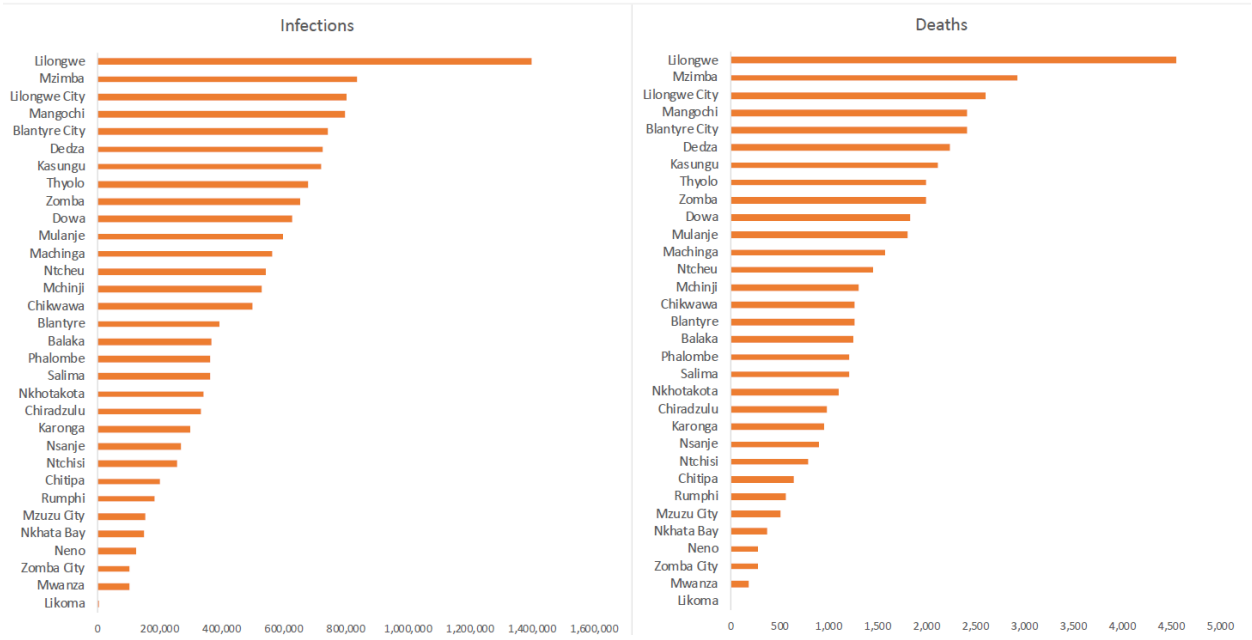

Figure 2: Estimated Total Cases & Deaths in Current Scenario (MOH Kuunika, 2020)

The Kuunika model estimates that with the current policies, the daily infections may go up to 1.6M with the number of people hospitalized and in critical care going up to 87,500 and 24,000, respectively, at the peak of the pandemic. In contrast, the ICL Model estimates that with the current policies, a daily incidence of 600,000 at the peak of the pandemic is projected, requiring 52,000 hospital beds and 300 ICU beds. Although the ICL model can be considered more conservative than the Kuunika model in terms of the pandemic's effects, the projected hospital beds required in the ICL model is twice as much the available hospital bed capacity in the country. Without the sufficient capacity to treat severe cases, the expected infection fatality ratios could be higher in Malawi than those in high income countries.

The models show that the most effective strategy for reducing transmission of COVID-19 is a strict lockdown which includes social distancing, restrictions on population movement, prohibition of public transport, and face covering. Shielding those at highest risk (60+ years) should, in theory, significantly reduce deaths, however, feasibility of implementing this in the Malawi context is not well understood.

The models also showed that timing of introduction and duration of the interventions has a significant impact on their effectiveness. Potential resurgence of COVID-19 once interventions are lifted is a significant concern, especially for those highly effective interventions which would prevent herd immunity.

In addition to the 2 models presented above, Dr. Tim Hallet (ICL) shared projections of the impact of COVID-19 on HIV, TB and Malaria response in Low- and Middle-Income Countries (LMIC), including Malawi. This model showed that the mitigation measures, such as a lockdown, could potentially reduce the health-seeking behaviours and seriously limit health facilities' outreach activities to patients. As a result, HIV, TB and Malaria related deaths over 5 years may be increased by up to 10%,20% and 36% respectively, compared to pre-pandemic projections. Maintaining critical prevention activities and healthcare services for HIV, TB and Malaria could reduce the overall impact of the epidemic.

2.2 Public Health Implications and Messaging on COVID-19

The Public health implications of the COVID-19 pandemic were further presented and discussed in terms of the global COVID-19 control strategies and impact, opportunities and challenges of testing Coronavirus, Contact tracing, Community Shielding of the Elderly, Public health messaging.

An analysis of Malawi's COVID-19 pandemic control strategies in comparison to different countries was presented by two College of Medicine (CoM) Public Health specialists, Prof. Victor Mwapasa & Dr Getrude Chapotera. The analysis showed that Malawi is satisfactory in terms of testing people with symptoms and contact tracing, but unsatisfactory in terms of case finding and social distancing. Notably, the poor performance on case finding was attributed to the current limited testing approach which focused on testing at Points of Entry and testing identified contacts of COVID-positive individuals.

MOH-PHIM Director, Dr. Matthew Kagoli, acknowledged the possibility that true numbers of COVID-19 cases were much higher than reported and therefore more testing is needed. Although there is opportunity to expand testing using facilities that already have GeneXpert capabilities as well as using cheaper antibody tests, key challenges persisted including: limited equipment servicing, limited skilled personnel, inadequate reagents, donor dependence, lack of molecular testing at Health center level, and low sensitivity of available antibody tests persist. Given resource constraints, targeted testing is being pursued over mass testing.

Relatedly, MLW Professor of Tropical Epidemiology, Prof. Liz Corbett, presented on the importance of contact tracing (as a form of targeted testing) and strategies that could be drawn from the Ebola pandemic which include the need for continued focus on contact tracing, testing, and isolation. For COVID-19, rapid investigation and differentiation of the signs and symptoms with other influenza-like illnesses at community level is crucial, therefore, use of Point-of-Care (POC) antibody testing at community level is recommended. Furthermore, it was recommended to expand the community health worker network to create an 'Army of contact tracers' who would also champion social behavioural change in their communities.

Dr. Titus Divala from the Kuteteza Initiative (SMD,MLW&COM) presented opportunities for shielding the elderly who are the highest at risk of COVID-19 within the rural Malawi context. It was projected that preventing 60+ year olds from SARV-COV-2 infection could potentially achieve up to 80% less mortality than projected, 80% less demand for critical care, and 40% less pressure on hospital oxygen-bed demand. The proposed strategy involves a community-based approach to: 1) empower the elderly with information; 2) help the elderly practice extreme physical distancing; and 3) train the community to understand the need to shield the elderly and to support creation of safe homes.

Given travel and social distancing policies, one way to educate the communities on COVID-19 is through the use of animations that could be shared with community workers and other community leaders who are trusted and well-respected members of the community. Tom Gibb from Picturinghealth shared existing materials already developed on shielding the elderly. The need for good communication strategies within the communities was also stressed.

2.3 Economic, Psycho-social, Ethical and Nutrition aspects of COVID-19

The impact of COVID-19 on Malawi's Economy, Nutrition status and Psychosocial status was also assessed during the meeting.

The National Planning Commission Director, Dr. Thomas Munthali, presented that the sectors hit hardest by the pandemic are accommodation, food services, transportation, and storage. Thankfully, these sectors

are not the key drivers of the economy. Although Malawi's key sectors have not been badly affected by the pandemic (e.g. agriculture, forestry, fishing, wholesale and retail trade, manufacturing, finance, insurance, and real estate), further restrictions, such as a lockdown, would hit the economy badly.

Prof. Ken Maleta, COM Professor in Public Health, noted that although COVID-19 is unlikely to directly affect an individuals' nutrition, the policy responses, such as a lockdown, may lead to food insecurity due to disruption in supply chains. It was noted that the current response is good for nutrition security in the short term but does not ensure sustainable nutrition security especially in the hunger season. It was therefore recommended to revise the beneficiary selection policy for unconditional cash transfers to include households with nutrition-vulnerable members such as under 5 children, pregnant and lactating women.

Assoc. Prof. Eric Umar, COM Public Health expert and psychologist, highlighted that various groups are at risk of developing mental health issues due to the COVID-19 pandemic—namely health workers, people in isolation and/or quarantine, and highly-affected communities. For health workers, stress, fear, frustration, discrimination, trauma and lack of contact with families could lead to psychiatric disorders if not addressed. At community level, stress could result from fear, lockdown, disruption to life.

3 Policy Recommendations

3.1 Protection of the population

- Focus on enforcing measures that will protect the vulnerable and those at most risk of severe illness/death whilst avoiding mass livelihoods disruption
- Implement shielding of the elderly (60+ years) who have the highest risk of severe illness and death from COVID-19
- Considerations/plans should be made on the possibility of resurgence once interventions have been lifted particularly for those interventions which would prevent herd immunity. A phased withdrawal of interventions is needed to mitigate risk.
- Include mental health in basic services and strengthen community and family support. Focused non-specialized support and specialized services (e.g. for health workers, those in quarantine) should be provided.
- Use trusted, well-respected members of the community (e.g. village or religious leaders) to communicate health education messages to the communities.
- Announce government policies on COVID-19 on all government websites
- An equitable and accessible framework needs to be developed for COVID-19 prevention, treatment and recovery.

3.2 Social protection

- Revise the beneficiary selection policy for the unconditional cash transfers to include households with nutrition vulnerable members such as under 5 children, pregnant and lactating women and the elderly.
- For vulnerable groups requiring extreme physical distancing e.g. the elderly, consider providing a commodity basket instead of a cash transfer.
- Ensure all aspects of health and well-being are covered including mental health, nutrition, ethics, in the COVID-19 response by incorporating interdisciplinary expertise within the decision-making groups.

3.3 Protection of the economy

- Whilst models show that the most effective strategy for reducing transmission of COVID-19 is a strict lockdown, there is a need to balance between protecting people's health and the economy.
- Substitute imports with locally manufactured basic needs
- Invest in robust health systems
- Invest in ICT which has proved crucial in managing service and monitoring the pandemic

3.4 Protection of the health system

- Maintain critical prevention activities and healthcare services including services for HIV, TB and Malaria
- Introduce community-based Point-of-Care (POC) Antibody testing to enable rapid investigation and differentiation of the signs and symptoms with other influenza-like illnesses
- Expand Community Health Worker network to create an 'Army of contact tracers'/COVID-19 Champions

3.5 New evidence required

The following areas for further investigation were identified:

- Investigate other contextual factors that could contribute to COVID-19 severity and mortality including, poverty, access to clean water, malnutrition, unknown prophylaxis and limited availability of ICU hospital care and oxygen concentrators.
- Investigate potential explanations for why the COVID-19 outbreak in Malawi, to date, has not tracked closely to modelled trajectories (the possible reasons include limited testing and under-diagnosis, incomplete attribution of deaths, incorrect modelling assumptions, internal spread slower than expected) to inform more accurate future models and their assumptions
- Investigate Impact of HIV, TB, Malaria and non-communicable diseases on the severity of COVID-19 in Malawi and LMIC.
- Attack rates in Malawi
- Extent of community spread at sub-national level in Malawi
- Behavioural data on people's compliance with recommendations and health-seeking behaviour
- Health System capacity in each site to be able to triangulate transmission vs capacity per day to guide resource allocation
- Feasibility of shielding the elderly in the Malawi context
- Analysis of ethical aspects of COVID-19 including the potential harms of inadequate protection
- Economic Analysis of interventions such as mass testing vs targeted testing, POC testing vs Molecular testing