**KEY MESSAGES**

While notable progress has been made in Malawi’s efforts to meet the Millennium Development Goals surrounding child health and child survival, progress in curbing neonatal and maternal mortality and morbidity has been less substantial.

Cost Benefit Analysis run against the most promising singular and sets of interventions within Malawi’s environment revealed two interventions with significant promise:

1. **BEmONC5**, a compacted set of five specific interventions taken from within the conventional basic emergency obstetric and newborn care package, would target key vulnerabilities facing maternal and neonatal health in Malawi, averting 3,900 still births, neonatal and maternal deaths in 2021, rising annually to 5,800 by 2035. Ensuring that 90% of hospitals and health centers have the necessary equipment, capacity, infrastructure, and medicines to deliver BEmONC5 would require approximately MWK 2.5 billion (USD 3.4m) every two years in investment, put toward staff, training, inventory expansion, medicines, equipment and electricity generators. Through this investment, Malawi would experience a 15% reduction in neonatal mortality, a 5% reduction in maternal mortality and a 13% reduction in stillbirths, enjoying 3.1 kwacha in social benefits for every 1 kwacha invested.

2. Replacing the existing iron and folic acid (IFA) supplements with multiple micronutrients (MMN)\(^1\) for pregnant women would lead to 1,300 to 1,600 averted stillbirths and neonatal deaths per year. Scaled up to full coverage across Malawi, this program would require an investment of MWK 1.5 – 2.5 billion (USD 2.0m – 3.4m) annually over the next 10 years.

Additional interventions considered in the main analysis include the conventional 15-intervention package of basic emergency obstetric and newborn care (BEmONC) interventions and calcium supplementation in pregnancy. However, these are not as effective uses of resources and would represent less cost-effective uses of limited resources than the above interventions. Further analysis regarding these interventions can be found in the more detailed technical report.

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\(^1\) Multiple micronutrient tablets contain iron and folic acid along with other vitamins, so this intervention expands the varieties of nutrients received by pregnant women.
Benefits as Lives Saved

Our examination of the MNH context within Malawi revealed that of the 15 interventions regularly associated with BEmONC, five particular interventions accounted for 90% of the lives saved. The five interventions are: 1) Clean Birthing Environment; 2) Assisted Vaginal Delivery; 3) Neonatal resuscitation; 4) Kangaroo mother care; and, 5) Hygienic cord care. Taken together, these five interventions make a Compacted Obstetric and Newborn Care package which, scaled up to 90% coverage of all hospitals and health clinics, would lead to 1,979 avoided neonatal deaths (15% reduction), 1,787 avoided intra-partum still births (13% reduction) and 107 avoided maternal deaths (5% reduction) in the first year alone. These five interventions do not demand significant further complex equipment or consumables, and can be delivered by midwives and nurses (Table 1). Over the period 2020-2035 we expect the scaling up of these 5 interventions alone to save 72,800 lives (Figure 2). The value of these benefits is estimated at MWK 35 billion (USD 47m) in 2021, rising to MWK 125 billion (USD 168m) by 2035, and accrued in the value of lives saved. From a wealth-creation perspective, immediate economic benefits would be generated from averted maternal deaths, however as these represent only 2.5% of the lives saved, most of the economic benefits of this intervention would be delayed until the newborns saved reach working age.

Figure 2: Lives saved from BEmONC5

Source: IHME (2019)
Cost benefit analysis of improving neonatal and maternal health outcomes in Malawi

### Costs associated with Provision of BEmONC5:
Enabling BEmONC5 scaled up to 90% would require investment equivalent to about MWK 2.5 billion every two years with most of the cost required for on-site training including mentorships and recurrent costs associated with delivering the interventions (staff time, consumables, medicines). Additional investments would be needed for autoclaves and back-up electricity sources for facilities. Lastly, to account for stock outs we include a 30% one-time increase in necessary consumables to act as a buffer. The total estimated investment from 2020-2035 is MWK 19.8 billion (USD 26.6m) and would be need to be provided by the government or donor groups. Overall, the targeted package has a benefit-cost ratio of 3:1. Investment from 2020-2035 is MWK 19.8 billion (USD 26.6m) and would be need to be provided by the government or donor groups. Overall, the targeted package has an excellent benefit-cost ratio of 3:1.

### Costs associated with Provision of MMN:
Since most women already seek some antenatal care and the health system is set up to provide IFA pills, delivering multiple micronutrients (MMN) in place of IFA is largely a matter of paying extra for the more comprehensive supplements. There is also a modest transitional cost for planning, training and behavioral change communication, but overall the intervention would cost MWK 1,500-2,000 million (USD 2 - 3.4 million) per year (Figure 4). If current arrangements continue, the costs would be financed by the government or donor groups.

#### 2. Multiple Micronutrients, rather than iron and folic acid supplements

**Benefits as Lives saved and improved Lifetime Incomes:**
Replacing simpler iron and folic acid supplements with more comprehensive supplements, such as Multiple Micronutrient pills, would improve maternal malnutrition. This intervention would reduce neonatal mortality by 3-4% and stillbirths by 6%, 1,300-1,600 lives annually (Figure 5). It would also reduce prematurity by 5% and low birth weight by 4-5%. These benefits are significant, estimated in the short run as MWK 10 billion in 2021 rising to 21 billion in 2030 from lives saved alone. Additional benefits would accrue to a staggering 47,000 individuals who would avoid being born with low birth weight and 61,000 who would avoid stunting to 2030. Avoiding these afflictions have been shown to raise lifetime incomes by 8% and 43% respectively, a significant wealth creation potential/economic benefit when these children reach working age. The overall BCR is 14, this intervention offers good cost-effectiveness.

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1 Comprehensive health supply chain reforms would likely be more effective in the longer term, but this should be considered as a component of the entire health system rather than just for BEmONC supplies. While a reform of this nature would require additional up-front costs, existing evidence indicates that it would lead to even greater and cost-saving, improving the benefit-cost ratios presented in this brief.
## Malawi Priorities: Background

Malawi Priorities is a research-based collaborative project implemented by the National Planning Commission (NPC) with technical assistance from the African Institute for Development Policy (AFIDEP), and the Copenhagen Consensus Center (CCC) to identify and promote the most effective interventions that address Malawi’s development challenges and support the attainment of its development aspirations. The project seeks to provide the government with a systematic process to help prioritize the most effective policy solutions so as to maximize social, environmental and economic benefits on every kwacha invested. Cost-benefit analysis is the primary analytical tool adopted by the project. Cost-benefit analysis will be applied to 20-30 research questions of national importance. Research will take place over the course of 2020 and 2021.

Research questions were drawn from the NPC’s existing research agenda, developed in September 2019 after extensive consultation with academics, think tanks, the private sector and government. This sub-set was then augmented, based on input from NPC, an Academic Advisory Group (AAG) of leading scholars within Malawi, and existing literature, particularly previous cost-benefit analyses conducted by the Copenhagen Consensus Center. The research agenda was validated and prioritized by a Reference Group of 25 prominent, senior stakeholders. The selection of interventions was informed by numerous consultations across the Malawian policy space, and one academic and two sector experts provide peer review on all analyses.

Cost-benefit analyses in Malawi Priorities consider the social, economic and environmental impacts that accrue to all of Malawian society. This represents a wider scope than financial cost-benefit analysis, which considers only the flow of money, or private cost-benefit analysis, which considers the perspective of only one party. All benefit-cost ratios (BCRs) reported within the Malawi Priorities project are comparable.

The cost-benefit analysis considered in the project is premised on an injection of new money available to decision makers, that can be spent on expanding existing programs (e.g. new beneficiaries, additional program features) or implementing new programs. Results should not be interpreted as reflections on past efforts or the benefits of reallocating existing funds.

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