

Disease Control Priorities, Fourth Edition
Volume 1, Disease Control Priorities in Practice

Malawi UHC Country Translation Process

Pakwanja Desiree Twea, Paul Revill, Sakshi Mohan, Gerald Manthalu, Dominic Nkhoma, Collins Owen Francisco Zamawe, and Collins Chansa

Working Paper 7, February 2024

DCP⁴

Disease
Control
Priorities

economic evaluation for health

B:CEPS

- BERGEN CENTRE
- FOR ETHICS AND
- PRIORITY SETTING
- IN HEALTH



UNIVERSITY OF BERGEN



economic evaluation for health

- Title: **Malawi UHC Country Translation Process**
- Author (1): Pakwanja Desiree Twea
Affiliation: Bergen Centre for Ethics and Priority Setting in Health, University of Bergen; Malawi Ministry of Health and Population
- Author (2): Paul Revill
Affiliation: Centre for Health Economics, University of York
- Author (3): Sakshi Mohan
Affiliation: Centre for Health Economics, University of York
- Author (4): Gerald Manthalu
Affiliation: Malawi Ministry of Health and Population
- Author (5): Dominic Nkhoma
Affiliation: Health Economics and Policy Unit, Kamuzu University of Health Sciences
- Author (6): Collins Owen Francisco Zamawe
Affiliation: The World Bank, Health Nutrition and Population, Global Practice
- Author (7): Collins Chansa
Affiliation: The World Bank, Health Nutrition and Population, Global Practice

Correspondence to: Pakwanja Twea (pakwanja.twea@uib.no)

Preface

Since the early 1990s, researchers involved in the Disease Control Priorities (DCP) effort have been evaluating options to decrease disease burden in low- and middle-income countries. This working paper was developed to support the Fourth Edition of this effort. It is posted to solicit comments and feedback, and ultimately will be revised and published as part of the DCP4 series.

DCP4 will be published by the World Bank. The overall DCP4 effort is being led by Series Lead Editor Ole F. Norheim, Director of the Bergen Centre for Ethics and Priority Setting in Health, University of Bergen. Core funding is provided by the Norwegian Agency for Development Cooperation and the Norwegian Research Council.

More information on the project is available at: <https://www.uib.no/en/bceps/156731/fourth-edition-disease-control-priorities-dcp-4>.

Malawi UHC Country Translation Process

Abstract

Malawi has developed and implemented essential health packages (EHP) since 2001. This paper aims to document the health sector prioritisation process for the development of the EHPs with a focus on the third EHP (2017-2022). The results show that the multi-stakeholder EHP Technical Working Group leads the EHP development and review process. EHPs in Malawi have focused on addressing the burden of disease and equity challenges in healthcare. Health maximisation, equity, continuum of care, and complementarities were the key criteria for the third EHP. The EHP review team used local costing data, while effectiveness data was from the DCP2 series, WHO Choice, and the Tufts Global Registry. The final EHP had a cost-effectiveness threshold of \$61 with 97 health interventions.

Table of Contents

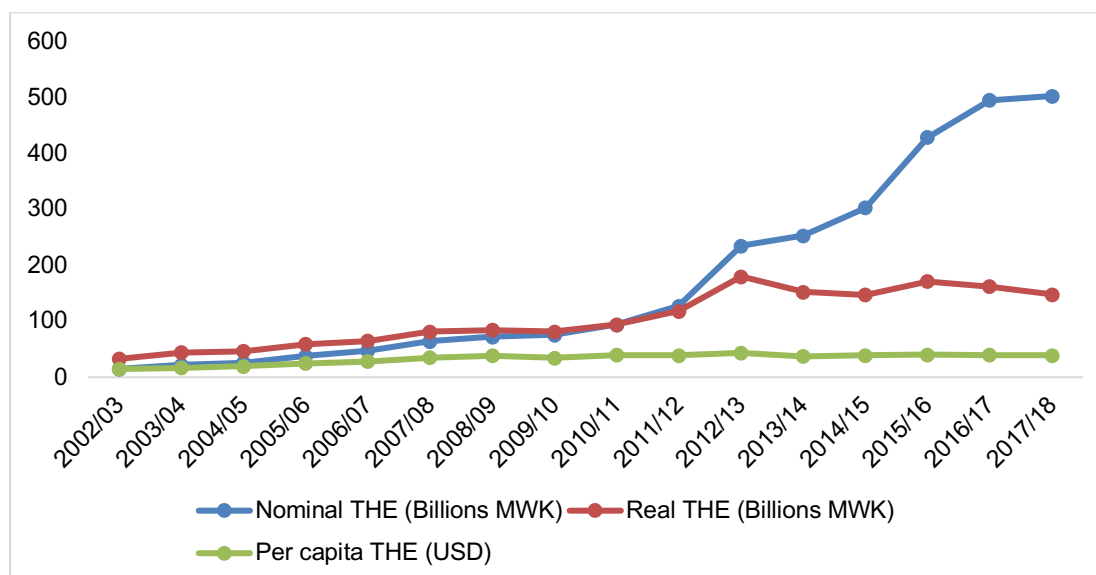
1.0 Background.....	5
2.0 Evolution of the EHP in Malawi	6
3.0 EHP Priority Setting Process	7
EHP Development – General Process	7
EHP III Development	8
4.0 Analyses and Tools.....	11
5.0 Summary of Interventions, Cost-Effectiveness, and Cost of the Third EHP	12
6.0 Practical Application and Effect of the EHP	13
7.0 Limitations and Future Directions	14
References.....	15
Annexes	17

1.0 Background

The Government of Malawi (GoM) is committed to meeting its domestic and international commitments to health service delivery. These commitments are enshrined in the National Health Policy 2018-2030 (Ministry of Health 2018) and medium-term strategic frameworks such as the five-year Health Sector Strategic Plan (HSSP) III (Ministry of Health 2023). Domestically, the law mandates the GoM to provide adequate health care to the population in accordance with the health needs of the population and international standards of care (Government of Malawi 1994). To deliver on the universality mandate, Government policy is to reduce healthcare access barriers by providing a health benefits package (known as Essential Health Package (EHP) in Malawi) that residents can access for free at the point of consumption.

As is the case with most countries, the financial, human, and material resources available to provide free and quality health care are inadequate. For instance, the current per capita Total Health Expenditure of US\$39.6 (Ministry of Health 2020b) is insufficient to provide quality essential health services universally, as shown in Figure 10.1 below. With fiscal space challenges worsening due to the advent of the COVID-19 pandemic (World Bank 2020), the aspiration of adequate quality public healthcare services at the point of access and attainment of universal health coverage by 2030 remains improbable. Access to healthcare is still a challenge, with about 53% of women facing financial and geographical barriers (National Statistical Office/Malawi and ICF 2017). The first EHP that the GoM developed sought to address these and other access barriers by providing a framework within which the available resources would be targeted towards a prioritised package of health services. In this way, the available resources could be rationalised and provided at scale to more people and to increase financial protection.

Figure 10. 1: Total Health Expenditure Trends



Source: (Ministry of Health 2020b)

This paper aims to document the priority-setting process in Malawi's health sector as it relates to the development, implementation, and review of EHPs over the years. The paper will also discuss the content and lessons learnt from the implementing the third EHP (2017-22) and future directions. By documenting the implementation process and lessons learnt, the paper can

help to inform future design and implementation of health benefits packages in Malawi and other developing countries.

2.0 Evolution of the EHP in Malawi

The concept of an EHP for Malawi was first envisaged in the fourth National Health Plan (Ministry of Health 1999). However, it was only formally adopted in its successor plan, the Program of Work (PoW), the medium-term health strategy covering the period from 2004 to 2010 (Ministry of Health 2004). Apart from addressing health access barriers, the first EHP also aimed to contribute to poverty reduction in line with the recommendations of the World Development Report 1993 (World Bank 1993). At the core of the introduction of the EHP in the PoW was the use of burden of disease data to identify diseases and conditions that contributed the most to mortality and morbidity and to prioritise the interventions that could cost-effectively address those diseases. The objectives of the EHP in the PoW were “to improve technical and allocative efficiency in the delivery of health care; to ensure universal coverage of health services, and to provide cost-effective interventions that can control the main causes of disease burden in Malawi” (Ministry of Health 2004). Some limitations of this EHP included not explicitly accounting for equity and resource availability in its design. This oversight was evidenced by access being higher among the non-poor than the poor.

The EHP was first revised in 2011 as part of informing the first Health Sector Strategic Plan (HSSP), maintaining the same criteria of disease burden and cost-effectiveness of interventions (Ministry of Health 2011). For the burden of disease criterion, interventions were included for diseases/conditions contributing to at least 10,000 disability-adjusted life years (DALYs) per year across Malawi’s population. Interventions for diseases/conditions that imposed less than 10,000 DALYs were excluded. For cost-effectiveness, interventions with an incremental cost-effectiveness ratio (ICER) below USD150 per DALY averted per year were considered cost-effective. Interventions with ICERs higher than USD1050 were automatically excluded as these were deemed cost-ineffective, being more than three times the country’s GDP at the time (Phoya et al.). Unlike its predecessor, this EHP was designed to be more equitable by including more interventions targeting vulnerable population groups.

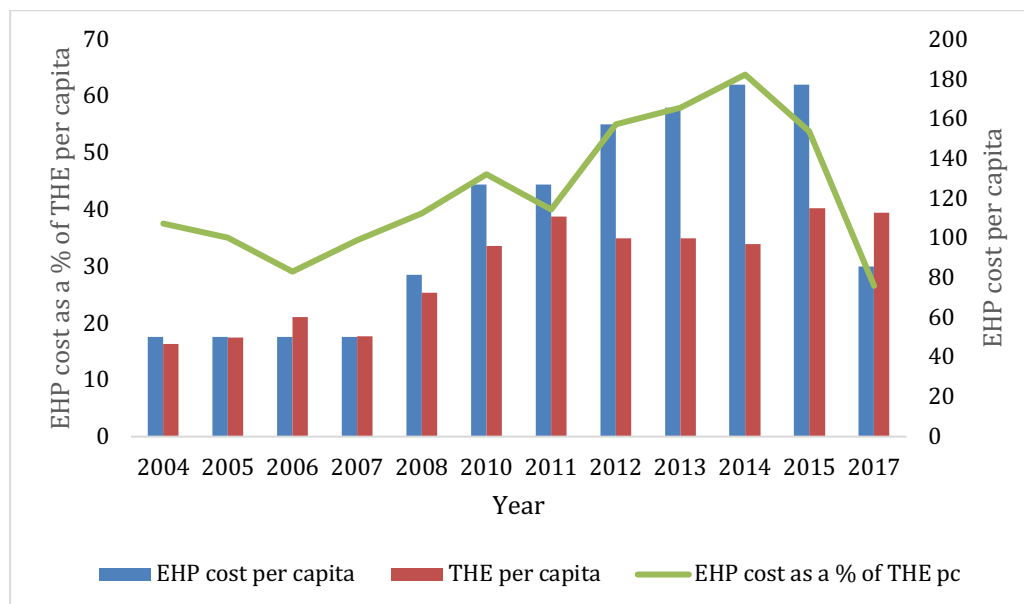
The MoH then developed the third EHP to inform the second HSSP for the period from 2017 to 2022. A recurrent challenge with the previous EHPs was that the cost of implementation was higher than the available resources. In the third EHP, the cost-effectiveness threshold (USD61 per DALY averted) takes into account the resource constraints at implementation (Ministry of Health 2017). Thus, the third EHP had lower financing gaps compared to its predecessors as fewer interventions were included in the package than would be the case with GDP per capita-based WHO thresholds (Ministry of Health 2017). However, without reforming service delivery, resource allocation, provider payment, and provider organisation, among others, it has been challenging for the MOH to enforce the package as public health facilities continued to deliver a broader range of services than those included in the EHP (Ministry of Health 2017).

Error! Reference source not found.0.2 below shows the cost and ¹affordability trends of EHPs in Malawi. Notably, except for 2005-2007 and 2017, the cost of EHP delivery has

¹¹ Affordability refers to the cost of the EHP relative to THE, the package is considered affordable if the cost of implementation is lower than the EHP.

exceeded available resources (Ministry of Health 2016a, 2020b) as characterised by the per capita total health expenditure. This is particularly apparent for the second EHP, which covers the period from 2011 to 2016. Despite the first EHP covering the years 2004-2010, between 2008-2010, more and more interventions were added, hence the cost escalation. EHP cost per capita again rose with the introduction of the second EHP in 2012. They were only reduced to within the level of THE resources with the introduction of the third EHP in 2017.

Figure 10. 2: EHP cost trend



Note: THE per capita data from the Malawi National Health Accounts Report for Fiscal Years 2015/16-2017/18, the Malawi National Health Accounts Report for Fiscal Years 2012/13 -2014/15 by the Ministry of Health, 2016 and 2020. The data on EHP cost per capita from Ministry of Health Strategic Documents: The Program of Work, National Health Sector Strategic Plans I and II, 2004, 2011, and 2017.

3.0 EHP Priority Setting Process

EHP Development – General Process

The health sector priority-setting process is led and coordinated by the Ministry of Health at the national level. The Ministry of Health coordinates the EHP development and review processes and acts as the secretariat to the EHP Technical Working Group (EHP-TWG), which leads the processes. As the secretariat to the EHP-TWG, the Ministry of Health is responsible for developing the EHP roadmap, Terms of Reference, and any other required guidance documents. The EHP-TWG is multi-disciplinary in its composition and has been designated the leadership role to make the EHP review process as inclusive and transparent as possible.

The EHP-TWG is responsible for collecting and assessing the evidence on healthcare interventions and providing objective recommendations that inform inclusion and exclusion decisions. The specific roles of the EHP-TWG are to provide technical input to inform policy decisions on EHP provision; ensure the EHP reflects the latest evidence and regularly update the EHP cost-effectiveness Tool (EHP-CEA Tool); monitor EHP implementation and suggest policies for improvement; and provide evidence to decision makers to inform EHP decisions (Ministry of Health 2016b). However, the MoH Senior Management makes the final decisions on the list of interventions to be included in the EHP. The EHP is reviewed and disseminated

among key stakeholders for consensus building before approval. Upon finalisation and approval, the HSSP, and the EHP are then disseminated among key national and sub-national level stakeholders.

The EHP-TWG is constituted based primarily on inclusiveness to ensure that all important stakeholders are represented, including the Ministry of Health at the headquarters and district levels, academia, civil society, private-not-for-profit health providers, development partners, and non-governmental organisations. Secondly, EHP-TWG members are included based on their competencies and expertise in areas including economic evaluation of health care interventions, evidence synthesis, health economic modelling, and clinical and economic evidence interpretation. Figure 10.3 below shows the stakeholders involved in each stage of the development and implementation process.

Figure 10. 3: EHP review stakeholders

EHP Development	EHP Implementation	EHP Implementation Monitoring
<ul style="list-style-type: none"> • MoH HQ • District Councils • Other Government Ministries, Departments, and Agencies • Academia • Civil Society Organisations • Development Partners • Local and International NGOs • Private Sector Providers 	<ul style="list-style-type: none"> • Ministry of Health • Public Sector Providers • Private not for profit providers 	<ul style="list-style-type: none"> • Ministry of Health • Public and Private sector providers • Development Partners

EHP III Development

For the third EHP, the review process consisted of three main phases: goal and criteria setting; operationalising criteria and defining the appraisal methods; and undertaking appraisal and budget impact analysis. During the first phase, the review of the previous EHP and identification of implementation challenges was undertaken. Data collection and analytical tools were developed during the second phase, and data was collected and appraised. Finally, the data was analysed and validated using the agreed-upon criteria.

Criteria Used to Guide the Design of The Third EHP

Several criteria were used to inform the inclusion of interventions in the third EHP. The first criterion was health maximisation, considered in the context of cost-effectiveness. The EHP tool, a specially designed Excel tool for EHP development, was used to revise the third EHP. The Ministry of Health collected information on the costs and effectiveness of the health interventions to be considered for EHP inclusion. Most of the data used in the tool were based on cost-effectiveness evidence from other countries and applied to the Malawi context, as no

new cost-effectiveness studies were commissioned to inform the process. The cost data were converted to Malawi cost equivalent.

A cost-effectiveness threshold (CET) of USD61 was applied to determine whether an intervention was cost-effective or not. This threshold was derived based on previous studies by Woods et al. (2016) and Ochalek et al. (2015), which estimated Malawi's CET to be in the range of USD3 to USD116 and USD24 to USD37, respectively. The final threshold of USD61 was calculated as a mid-point of the two estimates converted to 2016 US Dollars (J. Ochalek et al. 2018). Results were presented using a net health benefit measure, calculated as total health gains less health opportunity costs (costs divided by the cost-effectiveness threshold), multiplied by the size of the population in need of each intervention, to show the magnitude of total population health gains expected from implementing an intervention. This measure was also used to show the population health losses as a result of systems weaknesses leading to less than full implementation of most interventions (J. Ochalek et al. 2018).

The second criterion for the benefits package was equity. Equity considerations were based on geographic area, age, gender, and socioeconomic status. Equity was effectively implemented by reviewing the target populations for each intervention and placing greater weight on the interventions targeting marginalised demographic groups, which in this case were women and children under five years of age (Ministry of Health 2017). Cost-effective community-level interventions targeting rural communities with disproportionate barriers to health access were also given greater weight. The equity implications of the EHP were subsequently evaluated based on an assessment of which population groups most benefitted from EHP implementation using the approach of distributional cost-effectiveness analysis (Arnold, Nkhoma, and Griffin 2020). Table 10.1 below (Arnold, Nkhoma, and Griffin 2020) presents an example of the evaluation of equity implications of rotavirus vaccines.

Table 10. 1: Examples calculations with rotavirus vaccines

Rotavirus vaccination for children under 1						
Total population (A)	521 300					
Incremental health benefit (B)	0.14					
Incremental cost (C)	\$0.69					
Total cost (A × C)	\$809 318					
	Poorest	Poorer	Middle	Richer	Richest	Total
% survey reported cases of rotavirus (D)	36	16	23	13	12	100
DALYs averted if everyone vaccinated (A × B × D)	26 274	11 677	16 786	9488	8758	72 982
Uptake of vaccination (%) (E)	48	39	46	49	43	45
1. DALYs averted at current uptake (A × B × D × E)	12 611	4554	7721	4649	3766	33 302
Proportion of direct health benefit by subgroup	0.38	0.14	0.23	0.14	0.11	1
Cost by subgroup (A × C × E)	\$172 655	\$140 282	\$165 461	\$176 252	\$154 670	\$809 318
Proportion of opportunity cost by subgroup (F)	0.23	0.22	0.2	0.19	0.16	1
2. Health opportunity cost by subgroup [F × (A × C/61)]	3052	2919	2654	2521	2123	13 268
3. Net health benefit by subgroup (1-2)	9560	1635	5068	2128	1643	20 034
Proportion of net health benefit by subgroup	0.48	0.08	0.25	0.11	0.08	

Note 1: Reprinted from *Distributional impact of the Malawian Essential Health Package* by Arnold, Matthias, Dominic Nkhoma, and Susan Griffin, 2020, *Health Policy and Planning*, 35(6), <https://doi.org/10.1093/heapol/czaa059>, Creative Commons CC BY – reprint permission request sent – waiting for response

A third criterion of the continuum of care criterion was also used to facilitate linkages between interventions. For instance, where it was feasible, considerations were made to include all the treatments along a continuum to ensure continuity of services. Considerations were also made to include fully development partner financed interventions. This was designed to optimise the costs of additional interventions and allow the population to access “bundled services” in a more effective manner, thus improving financial risk protection (Ministry of Health 2017).

The fourth criterion was complementarities between interventions in line with the organisation of services at all levels of service delivery. For instance, in the case of pregnant women, considerations were made for all the services that need to be delivered as part of ANC. This criterion accounts for horizontal complementarities in the delivery of healthcare interventions.

4.0 Analyses and Tools

The priority-setting process for the third EHP was implemented in two parts. The first part was reviewing available evidence on cost-effectiveness and selecting the interventions that were considered cost-effective in the Malawian setting. The second part was the application of the criteria described above and the use of a consultative process to finalise the interventions that would be part of the EHP. The second part of this process relied on expert opinion and was done through consensus building with experts from district health offices and tertiary hospitals. The consultative process included consultations for interventions with and without cost-effectiveness evidence.

For the cost-effectiveness analysis part, the process was completed in an Excel-based tool developed specifically for the EHP design process (J. Ochalek et al. 2018). Using this tool, the team aggregated available information on the costs and effectiveness of interventions. This tool allowed the secretariat to collate and analyse the data in a convenient format for the analyses planned and extend the analysis beyond what was feasible in the available tools. However, other tools, such as the OneHealth tool, were still used for health system cost analysis. The EHP tool was used to analyse the available information on cost-effectiveness and for health service planning and costing. The costing considered the current and targeted levels of service delivery as well as the implementation levels that were considered more realistic given the health system capacity. Additional simulations were done to ascertain the level of health system expansion required to accommodate higher service delivery levels. Resource Mapping² data were used to inform medium-term resource availability and to compare the available resources to the cost of implementing the interventions in the EHP.

Data on per-patient costs and health benefits of interventions were primarily obtained from the Tufts Global Health Registry³ (Center for the Evaluation of Value and Risk in Health (CEVR) Tufts Medical Center), but also included evidence from the DCP2⁴ Series, WHO CHOICE papers, and systematic reviews. Per unit costs of medicines, vaccines, and commodities for delivering interventions were obtained from the Central Government Procurement Agency and other procurement agencies in the health sector. Due to limited evidence, cost-effectiveness data for some health interventions, particularly multi-sectoral, were not available and not included in the first analysis phase. Such interventions were assessed for inclusion during the second consultative phase. The WHO OneHealth tool was used to ascertain coverage rates in terms of what would be realistic based on the capacity of the health system (J. Ochalek et al. 2018).

² “Resource Mapping (RM) tracks forward-looking budget data for all organisations in the Malawian health sector, including relevant government ministries, departments, and agencies (MDAs), the Christian Health Association of Malawi (CHAM), bilateral and multilateral partners, as well as nongovernmental organisations (NGOs), though private health facilities are not included” Ministry of Health (2020a)

³ now the “Global Health Cost Effectiveness Analysis (GHCEA) Registry”

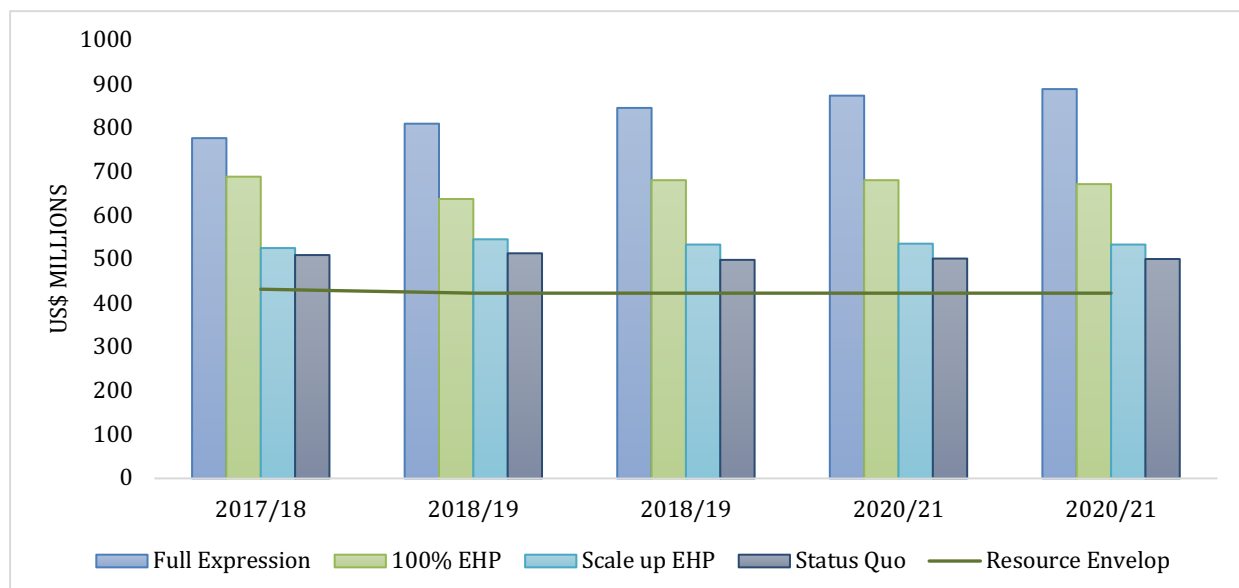
⁴ Due to the timing of the EHP development process, DCP3 evidence was not considered as this was only finalised after the completion of the EHP review process.

5.0 Summary of Interventions, Cost-Effectiveness, and Cost of the Third EHP

The total number of potential interventions was 258, but the interventions for which complete data was available were 71. Based on the CET, only 52 EHP interventions were sufficiently cost-effective to be included in the Malawi EHP. However, in the second consultative phase, considering the criteria outlined above and broader policy needs, the list of interventions included in the package increased to 97.

In costing the EHP, four scenarios were considered. The first (total demand) scenario included all interventions that could be delivered, including those that were eventually excluded from the EHP. In addition to including all interventions, the assumption of complete coverage of the services made this scenario unaffordable and unattainable within the implementation timeframe. The second scenario was 100% coverage of all the interventions included in the EHP. This was also unattainable as there were significant coverage gaps at baseline that could not realistically be addressed during the five-year implementation period. The third (scale-up) scenario allowed for a gradual increase in the coverage rates during the five-year period of implementing the HSSP and had more realistic costs. This scenario was, therefore, used as a basis for planning. For the status quo scenario, costs were calculated based on the current coverage rates for the duration of the HSSP II. The revised EHP costs 31% less than the cost of providing its predecessor package and has a greater potential to generate population health impact (DALYs averted). While implementing the previous package (second EHP) would have cost USD7.91 per DALY averted, with the third EHP, it cost USD5.97 per DALY averted (Ministry of Health 2017). Figure 10.5 below (Barker 2018) shows the costs of each scenario highlighted above across the implementation period.

Figure 10. 4: Summary of estimated EHP Costs



Note 2: Reprinted from *Costing of Malawi's Second Health Sector Strategic Plan using the OneHealth Tool* By Barker C, 2018, *Health Policy Plus*, ISBN-13: 978-1-59560-163-6— *reprint permission request sent, waiting for response*

Source: Barker, C (2018)

The cost assumptions were based on data collected during the resource mapping exercises. Resource Mapping is based on self-reported data on projected financing projections and

informs the collective projections for the health sector. Further assumptions on fiscal space were based on a previous study by the World Bank, which indicated limited possibilities for expanding the fiscal space in the medium term (The World Bank Group 2017).

6.0 Practical Application and Effect of the EHP

The implementation of the EHP occurs at the service delivery level, where providers are expected to prioritise the delivery of interventions included in the EHP. In practice, since Malawi has a policy of free health care at the point of access, it is difficult for providers to restrict access to non-EHP interventions where intervention inputs were centrally procured and, in some cases, fungible across EHP and non-EHP interventions. This and other practical implementation challenges prompted subsequent analyses exploring how public financial management mechanisms could better align with EHP prioritisation. Some of the EHP analytical and practical applications are highlighted below.

i. The development of the Geographical Resource Allocation Formula

The health sector geographical Resource Allocation Formula (RAF) was instituted as the primary resource allocation mechanism for drug and recurrent expenditures at the sub-national level. The development of the first geographical RAF dates to 2002, just before the development of the first EHP. The Ministry of Health updated the RAF in 2008. Following the review and approval of the updated RAF, it was implemented for a few years before the Government reverted to the incremental historical-based allocation pattern.

In 2017, the MoH started revising the RAF to improve efficiency, equity, and accountability in resource allocation (McGuire et al. 2020; Twea, Manthalu, and Mohan 2020). The updated RAF is founded based on an estimation of the estimated cost of EHP implementation for each district and allocates available resources proportional to need. The cost-of-service delivery is calculated based on the unit cost of providing the intervention, the expected number of cases based on incidence, prevalence, and utilisation rates. This RAF design allowed for an alignment between resource allocation and the expected level of service delivery.

ii. Use of the EHP in National and Sub-national planning

During the implementation period of the third EHP, the Ministry sought to align national and sub-national level planning to the EHP. The district health planning guidelines (2018-2022) recommended budget prioritisation through the lens of EHP service delivery. More specifically, a bottleneck analysis approach was used to identify health systems gaps for low-performing (in terms of coverage and quality) EHP intervention (Kiwanuka Henriksson et al. 2017). This process was designed to align health planning, resource allocation, implementation, and monitoring and evaluation to EHP delivery. Not only did the process bring about a greater focus on performance in planning and continuous improvement, but it also allowed district managers to have greater visibility across the spectrum of planning to evaluation and EHP prioritise activities, which would result in improved EHP delivery.

iii. Alignment of Resource Tracking Efforts to the EHP

The Ministry of Health has conducted resource mapping exercises since 2011 as part of its resource-tracking efforts. Resource mapping is one way of augmenting other financial tracking instruments the Ministry uses. “Resource Mapping (RM) tracks forward-looking budget data

for all organisations in the Malawian health sector, including relevant government ministries, departments, and agencies (MDAs), the Christian Health Association of Malawi (CHAM), bilateral and multilateral partners, as well as nongovernmental organisations (NGOs), though private health facilities are not included” (Ministry of Health 2020a).

A key requirement for the MoH was to track resource availability and expenditure according to the EHP. The reporting of data in this manner allowed for the estimation of health financing gaps and provided evidence for resource allocation at the domestic and international levels.

iv. EHP Distribution Impact

One of the health sector objectives, as stated in the HSSP II, was to ensure that the implementation of the EHP is equitable. A study by Arnold et al. (2020) used distributional cost-effectiveness analysis (DCEA) to evaluate Malawi EHP interventions based on two objectives: increasing population health and reducing health inequality. Equity was assessed by geographical location i.e., urban vs. rural residence, and wealth, using the International Wealth Index. Overall, the authors found that a similar set of interventions would be prioritised when the impact on health inequality is incorporated alongside impact on overall population health (Arnold, Nkhoma, and Griffin 2020). When comparing EHP impact based on socioeconomic groups, the findings showed that utilisation of EHP interventions was higher among the poorest. Such analysis can render support to the usefulness of the EHP design and its implementation as a health policy instrument towards achieving the UHC objectives underlying the EHP.

7.0 Limitations and Future Directions

One of the limitations is that the EHP financing gaps still exist. This could result from the mismatch between planned budgets and actual expenditures by development partners and the government. As such, linking the interventions in the EHP to financing and results is limited. Other EHP implementation challenges that have been highlighted in the medium-term implementation strategies include limited awareness of the EHP among stakeholders, EHP’s lack of policy enforcement, lack of clarity over excluded but otherwise cost-effective interventions, vertical organisation of program management, and input-based expenditure tracking under IFMIS. For the EHP to be fully implemented, the entire policy and implementation machinery need to be aligned with it, including but not limited to consumables and equipment purchase, donor guidance, health systems investments, budgeting, and service delivery and purchasing mechanisms. At present, Malawi has adopted a light-touch approach to prioritising EHP services across the country. However, a firmer approach might be adopted through a more comprehensive revision of purchasing processes.

Despite the above challenges, and as highlighted above, the EHP has been used adequately at various levels of the health system to guide policy, planning and budgeting in the health sector in Malawi. Further, the M&E system has continued to improve during the EHP implementation period for public health services with reporting linkages for community health care workers. These challenges and best practices were considered during the revision of the third EHP.

References

- Arnold, Matthias, Dominic Nkhoma, and Susan Griffin. 2020. "Distributional impact of the Malawian Essential Health Package." *Health Policy and Planning* 35 (6): 646-656. <https://doi.org/10.1093/heapol/czaa015>. <https://doi.org/10.1093/heapol/czaa015>.
- Barker, Catherine. 2018. *Costing of Malawi's Second Health Sector Strategic Plan using the OneHealth Tool*. Palladium, Health Policy Plus (Washington DC).
- Center for the Evaluation of Value and Risk in Health (CEVR) Tufts Medical Center. "Global health Cost-effectiveness analysis registry (GHCEA)." Accessed 15 November. <http://ghcearegistry.org/ghcearegistry/>.
- Government of Malawi. 1994. *Republic of Malawi (Constitution) Act*.
- Kiwanuka Henriksson, Dorcus, Mio Fredriksson, Peter Waiswa, Katarina Selling, and Stefan Swartling Peterson. 2017. "Bottleneck analysis at district level to illustrate gaps within the district health system in Uganda." *Global health action* 10 (1): 1327256-1327256. <https://doi.org/10.1080/16549716.2017.1327256>. <https://pubmed.ncbi.nlm.nih.gov/28581379> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5496050/>.
- McGuire, Finn, Paul Revill, Pakwanja Twea, Sakshi Mohan, Gerald Manthalu, and Peter C. Smith. 2020. "Allocating resources to support universal health coverage: development of a geographical funding formula in Malawi." *BMJ Global Health* 5 (9): e002763. <https://doi.org/10.1136/bmjgh-2020-002763>. <http://gh.bmj.com/content/5/9/e002763.abstract>.
- Ministry of Health. 1999. *The Fourth National Health Plan*. edited by Department of Planning and Policy Development. Lilongwe, Malawi.
- . 2004. *A Joint Programme of Work for a Health Sector Wide Approach (2004-2010)*. edited by Department of Planning and Policy Development. Lilongwe, Malawi.
- . 2011. *Malawi Health Sector Strategic Plan (2011-2016)*. edited by Department of Planning and Policy Development. Lilongwe, Malawi.
- . 2016a. *Malawi National Health Accounts Report for Fiscal Years 2012/13, 2013/14 and 2014/15*. edited by Department of Planning and Policy Development. Lilongwe, Malawi.
- . 2016b. Lilongwe.
- . 2017. *Health Sector Strategic Plan II*. Lilongwe, Malawi.
- . 2018. *National Health Policy*. edited by Department of Planning and Policy Development. Lilongwe.
- . 2020a. *Health Sector Resource Mapping Round 6*. edited by Department of Planning and Policy Development. Lilongwe, Malawi.

---. 2020b. Malawi National Health Accounts Report for Fiscal Years 2015/16 - 2017/18. edited by Department of Planning and Policy Development. Lilongwe, Malawi.

---. 2023. Malawi Health Sector Strategic Plan III 2023-2030. edited by Planning and Policy Development. Lilongwe: Ministry of Health.

National Statistical Office/Malawi, and ICF. 2017. *Malawi Demographic and Health Survey 2015-16*. National Statistical Office and ICF (Zomba, Malawi).

<http://dhsprogram.com/pubs/pdf/FR319/FR319.pdf>.

Ochalek, J., P. Revill, G. Manthalu, F. McGuire, D. Nkhoma, A. Rollinger, M. Sculpher, and K. Claxton. 2018. "Supporting the development of a health benefits package in Malawi." *BMJ Glob Health* 3 (2): e000607. <https://doi.org/10.1136/bmjgh-2017-000607>.

Ochalek, Jessica., James. Lomas, and Karl Philip. Claxton. 2015. *Cost per DALY averted thresholds for low- and middle-income countries : evidence from cross country data*. Centre for Health Economics, University of York.

Phoya, Ann, Trish Araru, Rabson Kachala, John Chizonga, and Cameron Bowie. *Disease Control Priorities in Developing Countries, 3rd Edition Working Paper #9*.

The World Bank Group. 2017. *Fiscal Space for Health in Malawi and Revenue Potential of Innovative Financing*. The World Bank Group (Washington DC). World Bank.

<https://openknowledge.worldbank.org/handle/10986/28404>.

Twea, Pakwanja, Gerald Manthalu, and Sakshi Mohan. 2020. "Allocating resources to support universal health coverage: policy processes and implementation in Malawi." *BMJ Global Health* 5 (8): e002766. <https://doi.org/10.1136/bmjgh-2020-002766>.

<http://gh.bmj.com/content/5/8/e002766.abstract>.

Woods, Beth, Paul Revill, Mark Sculpher, and Karl Claxton. 2016. "Country-level cost-effectiveness thresholds: initial estimates and the need for further research." *Value in Health* 19 (8): 929-935.

World Bank. 1993. *World Development Report 1993: Investing in Health, Volume I*. The World Bank.

---. 2020. *Malawi Public Expenditure Review 2020 : Strengthening Expenditure for Human Capital*. . World Bank (Washington DC).

<https://openknowledge.worldbank.org/handle/10986/35855>.

Annexes

10A. List of EHP Interventions

Category	Intervention Package	Intervention	Level of Care
RMNCH	ANC Package	Tetanus toxoid (pregnant women)	Community/Primary/Secondary
		Deworming (pregnant women)	Community/Primary/Secondary
		Daily iron and folic acid supplementation (Pregnant women)	Community/Primary/Secondary
		Syphilis detection and treatment (Pregnant women)	Community/Primary/Secondary
		IPT (pregnant women)	Community/Primary/Secondary
		ITN distribution to pregnant women	Community/Primary/Secondary
		Urinalysis (4 per pregnant woman)	Primary/Secondary
	Modern Family Planning	Injectable	Community/Primary/Secondary
		IUD	Primary/Secondary
		Implant	Primary/Secondary
		Pill	Community/Primary/Secondary
		Female sterilisation	Secondary
		Male condom	Community/Primary/Secondary
	Delivery Package	Clean practices and immediate essential new-born care (in facility)	Primary/Secondary
		Active management of the 3rd stage of labour	Primary/Secondary
		Management of eclampsia/pre-eclampsia (Magnesium sulphate, Methyldopa, Nifedipine, Hydralazine)	Primary/Secondary
		Neonatal resuscitation (institutional)	Primary/Secondary
		Caesarean section with indication	Secondary
		Caesarean section with indication (with complication)	Secondary
		Vaginal delivery, skilled attendance (Including complications)	Primary/Secondary
		Management of obstructed labour	Primary/Secondary
		New-born sepsis - full supportive care	Primary/Secondary
		New-born sepsis – injectable antibiotics	Primary/Secondary
		Antenatal corticosteroids for preterm labour	Primary/Secondary
		Maternal sepsis case management	Primary/Secondary
		Cord Care Using Chlorhexidine	Primary/Secondary
		Hysterectomy	Primary/Secondary
		Post-abortion case management	Secondary
	Treatment of antepartum haemorrhage	Primary/Secondary	
	Treatment of postpartum haemorrhage	Secondary	
	Antibiotics for pPRoM	Primary/Secondary	

Category	Intervention Package	Intervention	Level of Care
Vaccine Preventable diseases	Essential Vaccines Package	Rotavirus vaccine	Community/Primary/Secondary
		Measles Rubella vaccine	Community/Primary/Secondary
		Pneumococcal vaccine	Community/Primary/Secondary
		BCG vaccine	Community/Primary/Secondary
		Polio vaccine	Community/Primary/Secondary
		DPT-Heb-Hib / Pentavalent vaccine	Community/Primary/Secondary
		HPV vaccine	Community/Primary/Secondary
Malaria	First Line uncompliated Malaria treatment	Uncomplicated (adult, <36 kg)	Community/Primary/Secondary
		Uncomplicated (adult, >36 kg)	Community/Primary/Secondary
		Uncomplicated (children, <15 kg)	Community/Primary/Secondary
		Uncomplicated (children, >15 kg)	Community/Primary/Secondary
	Complicated Malaria treatment	Complicated (adults, injectable artesunate)	Primary/Secondary
		Complicated (children, injectable artesunate)	Primary/Secondary
	Malaria Diagnosis	RDTs	Community/Primary/Secondary
Microscopy for Malaria		Primary/Secondary	
Integrated management of childhood illnesses (IMCI)	ARIs	Pneumonia treatment (children)	Community/Primary/Secondary
		Treatment of severe pneumonia (Oxygen)	Primary/Secondary
	Diarrhoeal Disease	ORS	Community/Primary/Secondary
		Zinc	Community/Primary/Secondary
		Treatment of severe diarrhoea (IV Fluids)	Primary/Secondary
	Nutrition	Community management of nutrition in under-5 - Plumpy Peanut	Community/Primary
		Community management of nutrition in under-5 - micronutrient powder	Community/Primary
		Community management of nutrition in under-5 - vitamin A	Community/Primary
	Malaria Diagnosis	RDTs for under-5	Community/Primary
	Community Health	Community Health Package	Growth Monitoring
Vermin and Vector Control & Promotion			Community/Primary
Disease Surveillance			Community/Primary
Community Health Promotion & Engagement			Community/Primary

Category	Intervention Package	Intervention	Level of Care
		Village Inspections	Community/Primary
		Promotion of hygiene (hand washing with soap)	Community/Primary
		Promotion of Sanitation (latrine refuse, drop hole covers, solid waste disposal, hygienic disposal of children's stools)	Community/Primary
		Occupational Health Promotion	Community/Primary
		Household water quality testing and treatment	Community/Primary
		Home-based care of chronically ill patients	Community/Primary
		Child Protection	Community/Primary
NTDs	Treatment and MDA	Schistosomiasis mass drug administration	Community/Primary
		Case finding and treatment of Trypanosomiasis	Primary
		Trachoma mass drug administration	Community/Primary
HIV/AIDS	HIV Prevention	Cotrimoxazole for children	Community/Primary/Secondary
		PMTCT	Community/Primary/Secondary
	HIV Testing	HIV Testing Services (HTS)	Community/Primary/Secondary
	HIV Treatment	HIV Treatment for all ages – ART & Viral Load	Community/Primary/Secondary
Nutrition		Vitamin A supplementation in pregnant women	Community/Primary/Secondary
		Management of severe malnutrition (children)	Community/Primary/Secondary
		Deworming (children)	Community/Primary/Secondary
		Vitamin A supplementation in infants and children 6-59 months	Community/Primary/Secondary
TB		Isonized Preventive Therapy for children in contact with TB patients	Primary/Secondary
		First line treatment for new TB Cases for adults	Primary/Secondary
		First line treatment for retreatment TB Cases for adults	Primary/Secondary
		First line treatment for new TB Cases for children	Community/Primary/Secondary
		First line treatment for retreatment TB Cases for children	Community/Primary/Secondary
		Case management of MDR cases	Primary/Secondary
	TB Testing	LED test	Primary/Secondary
		Xpert test	Primary/Secondary
		MGIT test	Primary/Secondary

Category	Intervention Package	Intervention	Level of Care
		LJ test	Primary/Secondary
NCDs		Treatment of Injuries	Primary/Secondary
	Mental Health treatment	Basic psychosocial support, advice, and follow-up	Community/Primary/Secondary
		Anti-epileptic medication	Community/Primary/Secondary
		Treatment of depression (first line)	Community/Primary/Secondary
		Testing of pre-cancerous cells (vinegar)	Primary/Secondary
	Diabetes treatment	Diabetes Type I	Primary/Secondary
		Diabetes Type II	Primary/Secondary
		Hypertension	Primary/Secondary
Oral Health	Tooth pain treatment	Management of severe tooth pain, tooth extraction	Primary/Secondary
		Management of mild tooth pain, tooth filling	Primary/Secondary