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Commentary

FairChoices: A Decision Support Toolkit for Making Evidence-Informed, Equity-Sensitive Choices on the Path to UHC

Comment on "Selecting Cost-Effectiveness Methods for Health Benefits Package Design: A Systematic Approach"

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Abstract

National governments face difficult choices about which interventions to prioritize within their health benefits packages. A recent approach called adaptive health technology assessment (aHTA) seeks to address gaps in economic evidence for priority-setting. In this commentary, we reflect on how conventional HTA is imperfectly suited to health benefits package reform processes. We present the rationale and design of a decision support toolkit called "FairChoices," which builds on the principles of adaptive HTA. Compared with other decision-support approaches, FairChoices adds value by facilitating locally contextualized comparative cost-effectiveness analyses of interventions across the entire health sector using an integrated set of disease models and input data and standardized analytical assumptions, with equity metrics presented alongside cost-effectiveness. FairChoices is being developed in partnership with teams in Ethiopia, Zanzibar, Nepal, Ghana, and mainland Tanzania. The tool will eventually be released as a global public good to support priority-setting for universal health coverage (UHC) worldwide.

Keywords: Priority-Setting, Health Technology Assessment, Health Benefits Package, Decision Analysis

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Challenges and Opportunities in Health Benefits Package Design

One of the biggest challenges in health policy is making sure that health entitlements make the best use of scarce public resources. Health benefits packages are an important instrument for explicitly specifying entitlements and rationalizing spending, so their design is critical.[1] The current era is marked by the deprioritization of health in many countries, cuts in official development assistance, tepid economic growth, and post-pandemic "burnout."[2] Strengthening domestic institutions in health priority setting has never been more important.

A study by Nemzoff and colleagues from 2025 reviews the use of adaptive health technology assessment (aHTA) methods in health benefits package design.[3] The authors reviewed the literature and surveyed authors of 20 studies carried out in one or more of 13 countries or two world regions over the past eight years. Their paper underscores the heterogeneity of approaches used and lays out considerations for using aHTA to improve standardization and support country-led decision-making.

In our view, the paper is an important contribution to the cost-effectiveness literature, because it highlights the gap between an ideal world with complete cost-effectiveness information for every intervention available to a health system, and the current world wherein there is limited evidence for a fairly modest set of interventions, concentrated among diseases historically prioritized by donors and international organizations.[4]

We think the lack of a standardized approach Nemzoff and colleagues highlight points to something more fundamental: there is an imperfect fit between HTA (as broadly understood and applied) and the analytic methods needed for national health benefits package design.[5] The 4th Edition of Disease Control Priorities identified similar themes.[6]

For the past few years, our team at the Bergen Centre for Ethics and Priority Setting in Health has been developing a decision-support toolkit that we think fills an important gap and resolves some of these tensions. This commentary presents the rationale and design of "FairChoices,"[7] an analytical framework and toolkit inspired by the title of a 2014 World Health Organization (WHO) consultation on priority setting for universal health coverage (UHC).[8]

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The FairChoices Framework

The FairChoices framework goes beyond incremental cost-effectiveness analyses of standalone health interventions. We conceive of health benefit package analysis as happening at two levels. At the more aggregate level, there are questions about allocating resources across interventions. This includes prioritizing implementation of interventions that have already been introduced into the health system (eg, by improving access, quality, or both). At the more granular level, there are specific questions about the choice of components of a given intervention (eg, specific medications, procedures, or treatment eligibility thresholds) to ensure the best value for money, which is where conventional HTA typically works.

This distinction highlights how conventional HTA methods only partially address benefit package design questions. HTA was developed largely to assess new medical technologies at the margins of mature health systems, using an incrementalist approach, and relatedly the efficiency of various mutually exclusive options for a given intervention.[9] A benefits package, by contrast, needs to assess the value for money not just of introducing new technologies into the system, but of their aggregation into service bundles that deploy them and of the value of multiple independent interventions.[5] Figure 1 illustrates how these two levels interact within FairChoices, using an example from cardiovascular disease. Even if one intervention component is not cost-effective on its own, the unit of analysis is the full intervention bundle. For example, screening will not be cost-effective without following up with diagnostics and treatment.

Another important concept in the FairChoices framework concerns the nature of the cost-effectiveness ratios reported. Nemzoff and colleagues point out the long-running controversy between incremental and average cost-effectiveness ratios. We propose another type of ratio, which we term the "marginal cost-effectiveness ratio" (MCER), which we think better captures the efficiency question a benefit package design process is trying to answer.

An MCER represents the marginal health-gain in a population by increasing coverage of an intervention to a pre-specified proportion of the population (target level) not currently receiving the intervention, compared against the marginal cost of increasing intervention coverage to a target level,

$$MCER = \frac{\sum_a^A \Delta HY_a}{\sum_a^A \Delta \mathrm{Cos}t_a}.$$

Here, healthy life-years gained, ΔHY_a, and extra costs of scaling up the intervention, $\Delta \mathrm{Cost}_a$, are calculated across all cohorts (ie, people at age a) relative to a scenario where coverage is not scaled up. Both health gains and costs can be discounted at the user's discretion. While this formula implies that coverage will be scaled up, the MCER has the same interpretation if coverage is scaled down to a smaller proportion of the population (eg, due to budget cuts). An MCER uses economic costs just like an incremental cost-effectiveness ratio (ICER), so it also reflects the opportunity cost of increasing prioritization of a given intervention, and its interpretation (eg, comparison to cost-effectiveness threshold) is the same as an ICER.

Fair priority setting requires more than asking which services deliver the most health for the money, it also requires asking who benefits. FairChoices addresses this by reporting equity-adjusted marginal cost-effectiveness ratios (eMCERs) alongside MCERs. Equity adjustments are done using health-adjusted age at death, a measure of lifetime health.[10] The lower the health-adjusted age at death, the more severe the condition. Direct equity weights are then multiplied with an intervention's effectiveness, so that health gains for those with the least lifetime health count for more, following the weighting curve presented in Figure 2. Default analysis uses the curve in the illustration, but users of the tool can change the shape of the curve.

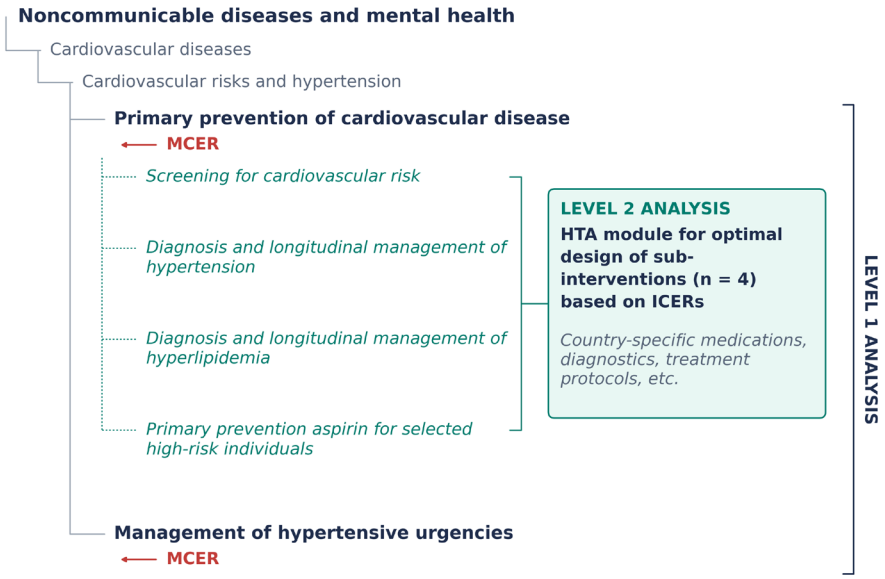


Figure 1. Two Levels of Analysis for Health Benefits Package Design. Abbreviations: MCER, marginal cost-effectiveness ratio; ICER, incremental cost-effectiveness ratio.

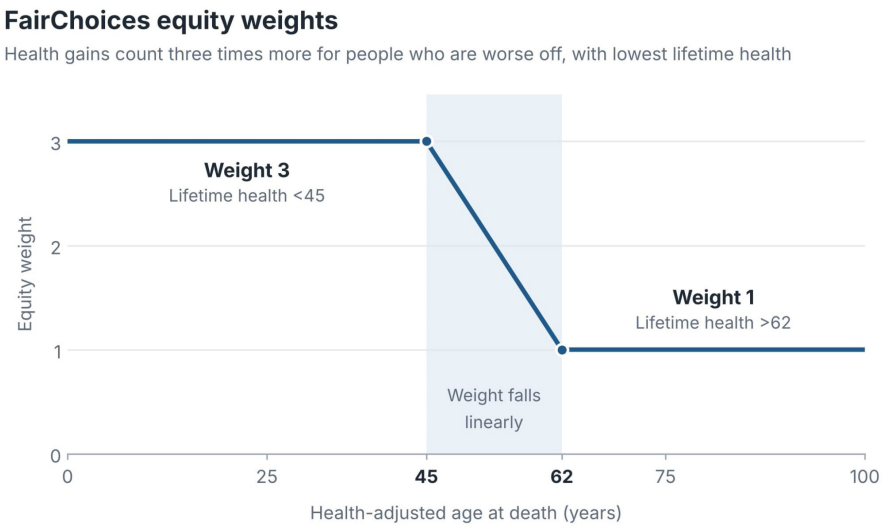


Figure 2. An Illustration of the FairChoices equity weights Used to Compute Equity-Adjusted Marginal Cost-Effectiveness Ratios for Interventions addressing Health Conditions With Different Health-Adjusted Ages at Death.

Building on this, we plan to add established measures of how fairly health is distributed, including the Atkinson, Gini, and Kolm indices, alongside distributional- and extended cost-effectiveness analysis. This will make the balance between improving total health and reducing unfair differences easier to explore, supporting both benefit package design and evaluation and scenario evidence for deliberation.

We also intend to include income effects, benefit–cost analysis, and socioeconomic inequalities, although further work is needed to integrate intersectoral and public health interventions and socioeconomic inequality indicators.

The FairChoices Toolkit

FairChoices is a series of digital tools organized around this framework. It uses mathematical modeling that is easy to understand given basic grounding in epidemiology, demography and public health economics. It leverages publicly available data for default input values and documents assumptions and software. The specific methods are described in detail in our technical documentation, alongside a beta version of the tool based on interventions from the 3rd edition of Disease Control Priorities, with some modifications and updates.[11] The online beta tool is meant to show how we envision the tool being used; it is not intended for actual policy use since it contains no local data and no mechanism for incorporating country-specific data.

The toolkit has three main components (Figure 3). The first is a data input tool, which allows users to define the interventions they want to analyze and enter data on intervention effects and local costs. The default intervention list in the tool will be aligned with WHO's UHC Compendium, which list high-level "interventions" across disease areas that roughly correspond to the sorts of technical working groups tasked with benefit package design.[12] Country teams can use these default parameters or override them to customize the interventions. Importantly, the data input tool allows users to add new interventions and assess their cost-effectiveness using our models.

The second component is the analytic engine itself, which uses demographic and epidemiological modeling and a simple cost model to assess MCERs of interventions identified by the user. The input tool and analytic engine are meant to streamline the process of doing locally contextualized cost-effectiveness assessments, in the spirit of aHTA.

The third element is a front-end tool for visualizing the outputs of the analysis; namely, lists of MCERs and eMCERs, for interventions and clusters of interventions specified by users. This visualization tool is meant to be agile enough to use in real time during a policy deliberation process, allowing for rapid scenario-running around different mixes of interventions.

FairChoices adds value to existing decision support tools by

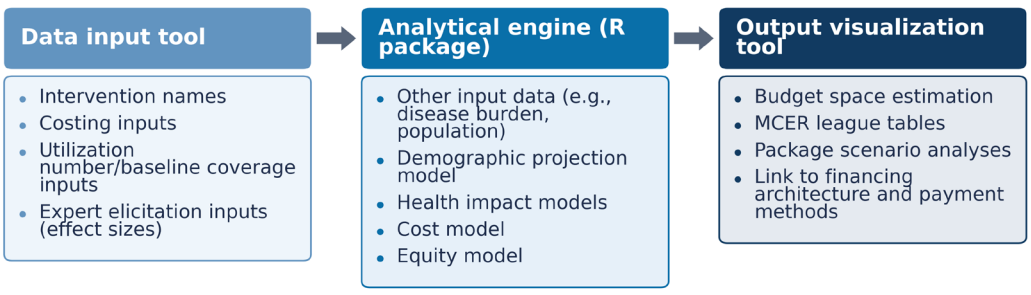


Figure 3. Three Main Components of the FairChoices Toolkit. Abbreviation: MCER, marginal cost-effectiveness ratio.

(*i*) aiming for a comprehensive list of interventions that cover the entire set of services that could realistically be provided in low- and middle-income countries, (*ii*) incorporating key ethical and distributional concerns in healthcare priority setting, (*iii*) developing data input and output visualization tools around principles of human-centered design and flexible formats (eg, Excel spreadsheets, web-based interfaces), and (*iv*) integration of artificial intelligence (AI)-supported evidence synthesis and structured expert elicitation for regular updating of default data. FairChoices is continuously being improved, following an iterative process based on interaction with in-country partners (See below) and methodological research that will be published separately in peer-reviewed manuscripts.

In-Country Collaborations

FairChoices is built on long-term partnerships rather than short-term technical assistance. With support from the Norwegian Agency for Development Cooperation (Norad), we work with ministries of health and finance, universities, and national institutions in Ethiopia, Ghana, Nepal, United Republic of Tanzania (Tanzania mainland and Zanzibar), Zambia, and Egypt (See Supplementary file 1). Each location has an autonomous Bergen Centre for Ethics and Priority Setting in Health FairChoices country team, with 5-10 people, supporting the local government in institutionalization of evidence-informed priority setting. The guiding principle is that priority setting must be nationally owned: country teams define the questions, lead the process, and make the decisions, while the global team provides methods, default evidence, and analytical tools.

Collaboration takes three main forms. First, supporting national processes for designing and revising health benefit packages, following a stepwise approach developed with partners in Zanzibar.[13] Second, investing in domestic capacity through jointly supervised PhD candidates, teaching in health economics and ethics, and FairChoices training. Third, co-producing research, with shared authorship and locally relevant questions.

Now that the beta version of FairChoices is available, the global team is working with country teams on refining the user interfaces and training materials, including through usability testing and processes to ensure the validity and local acceptability of the outputs. Subsequent manuscripts will report on the experience of in-country users with FairChoices. Our long-term aim is that capacity to set fair priorities becomes embedded in national institutions and continues beyond the project period.

FairChoices in Practice

We envision FairChoices being used within an evidence-informed decision-making process, enhancing transparency around value disagreements and aiding in policy learning. It would offer evidence at several points in the policy development process, mostly within technical working groups. The input tool and analytic engine address these groups' need to have data at their fingertips and have input into the design and refinement of that analysis as additional data are collected.

The first step in using FairChoices is mapping the components of an existing health benefits package onto the interventions in the input tool. The input tool will be designed to allow modification of the default intervention list, including aggregation and disaggregation of components and addition of interventions not currently in the UHC Compendium. An important part of this mapping is defining the intervention groups relevant to the level-one analysis, versus the more granular HTA-style analyses (Figure 1).

The tool includes country-specific default estimates of intervention costs, population in need, and coverage (ie, utilization relative to the population in need), but these are a starting point and should not be used uncritically for policy decisions; they should be verified, adjusted, or replaced. The AI- and expert-supported evidence synthesis process will include structured assessments of the generalizability (or lack thereof) of the global default evidence to specific country settings by adapting constructs from established frameworks like Grading of Recommendations, Assessment, Development, and Evaluation (GRADE). Still, in-country technical teams are ultimately responsible for determining the transferability of evidence to their settings.

Once the intervention list is finalized and parameterized, country teams can use the analytic engine to calculate (equity-adjusted) cost-effectiveness and run scenarios for bundling and scaling up interventions, looking at both health impact and budget implications across different combinations and sub-packages of interventions. These results are then summarized in the visualization tool described above.

Next Steps in Tool Development

Development of FairChoices will be supported at least through 2030, the end date of the current Norad project. We anticipate releasing new versions regularly as we gain more experience in the partner countries. Beyond 2030, we envision the tool becoming a global public good that others can improve and modify as they see fit.

Ultimately, FairChoices is meant to make policy development processes more efficient in settings with limited local technical capacity that have, historically, relied heavily on development partners and external consultants. By providing a standard set of disease models and generalizable data (eg, on intervention effectiveness), it can reduce the amount of redundancy that happens with many countries conducting *de novo* cost-effectiveness studies of the same interventions. By curating global data into one environment, using a standardized set of integrated disease models, and letting country users update the model with their own inputs, we hope to accelerate the process of doing locally-owned cost-effectiveness analysis, which is exactly the spirit of aHTA.

As Nemzoff and colleagues point out, there has been a recent push to support country-led priority setting in health and benefit package design. Initiatives such as the Disease Control Priorities Project and the International Decision Support Initiative were major accomplishments in the 2010s, but no such effort currently exists on the same scale.[14] Yet the need for priority setting in health has never been greater than

now. Our hope is that the FairChoices toolkit meaningfully contributes to the field of aHTA and adds value to the broader discourse around health benefits package design. Our team is open to collaborating with other groups working in health economics and global health and development – and, most importantly, with academics and government officials in low- and middle-income countries who want to use this tool and make it their own.

Disclosure of artificial intelligence (AI) use

The first draft of this commentary was dictated and transcribed into Word using MacWhisper 15.1.1. Figures were generated by Claude 3.1623.0 (Opus 5.5). Otherwise, no AI tools were used in developing the manuscript or drafting or editing the content.

Ethical issues

Not applicable.

Conflicts of interest

Authors declare that they have no conflicts of interest.

Authors' contributions

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Supervision: Kjell Arne Johansson.
Writing–original draft: Kjell Arne Johansson and David A. Watkins.
Writing–review & editing: Kjell Arne Johansson, Øystein Ariansen Haaland, Prasanna Tuladhar, Sali Ahmed, Krishna Kumar Aryal, Tarun Shankar Choudhary, and David A. Watkins.

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Supplementary files

Supplementary file 1. FairChoices Team Members (September 2026).

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