Bedside rationing under resource constraints - A national survey of Ethiopian physicians' use of criteria for priority setting

Frehiwot Berhane Defaye, Marion Danis, Paul Wakim, Yemane Berhane, Ole Frithjof Norheim, Ingrid Miljeteig*

*corresponding author

Frehiwot Berhane Defaye. Research Group in Global Health Priorities, Department of Global Public Health and Primary Care University of Bergen, Norway and Center for Medical Ethics and Priority Setting, Addis Ababa University, Ethiopia. Email: frehiwot.berhane@gmail.com

Marion Danis. Department of Bioethics, National Institute of Health, USA. Email: mdanis@cc.nih.gov

Paul Wakim. Biostatistics and Clinical Epidemiology Service, Clinical Center, National Institutes of Health, USA. Email: paul.wakim@nih.gov

Yemane Berhane. Addis Continental Institute of Public Health, Ethiopia. Email: yemaneberhane@ethionet.et

Ole Frithjof Norheim. Research Group in Global Health Priorities, Department of Global Public Health and Primary Care University of Bergen, Norway and and Center for Medical Ethics and Priority Setting, Addis Ababa University, Ethiopia. Email: ole.norheim@uib.no

Ingrid Miljeteig. Research Group in Global Health Priorities, Department of Global Public Health and Primary Care University of Bergen, Norway and Center for Medical Ethics and Priority Setting, Addis Ababa University, Ethiopia. Email: Ingrid.miljeteig@uib.no

Abstract

In low-income settings resource constraints force clinicians to make harsh choices. We examine the criteria Ethiopian physicians use in their bedside rationing decisions through a national survey at 49 public hospitals in Ethiopia. Substantial variation in weight given to different criteria were reported by the 587 participating physicians (response rate 91,7%). Young age, primary prevention, or the patient being the family´s economic provider increased likelihood of offering treatment to a patient while small expected benefit or low chance of success diminished likelihood. More than 50% of responding physicians were indifferent to patient's position in society, unhealthy behavior, and residence, while they varied widely in weight they gave to patient´s poverty, ability to work, and old age. While the majority of Ethiopian physicians reported allocation of resources that was compatible with national priorities, more contested criteria were also frequently reported. This might affect distributional justice and equity in health care access.

Introduction

Every day physicians make multiple decisions in their clinical practice based on values, experiences, and scientific evidence. Some of these decisions concern priority setting of scarce resources - the ranking of services according to their importance to determine the distribution of those services in such a way that is likely to create winners and losers (Norheim 2016). In addition to laws and guidelines, what sways their decisions?

Priority setting is inevitable, even in the richest countries in the world, and it happens at all levels in the health care system: at the macro-level through guidelines and policies, at the meso-level through institutional or organizational leaders, and at the micro-level by providers who care for individual patients (Kapiriri, Norheim, and Martin 2007, Bryant 2000). Two decades ago, the process of priority setting was described as happening in a black box; there was little insight into how these decisions were made, what criteria and principles were used or who was involved (Ham and Robert 2003, Holm 1998). Now more is known about these processes. While priorities are, optimally, set formally and follow explicitly spoken and agreed upon principles and criteria, they often involve more implicit or intuitive decision-making (Norheim et al. 2014). Barasa et al. state in their review of empirical studies of priority setting in hospitals that there is a dearth of empirical work on hospital level priority setting practices, and more so in smaller, rural hospitals in the context of developing countries (Barasa et al. 2014). The criteria used and the weight they are assigned have substantial impact on the decisions made, and it is crucial to get a better understanding of what matters for those who will make priority decisions.

In a literature review of priority setting criteria for health care decisions, the authors found extensive variations in the terminology used to define criteria (Guindo et al. 2012). The most

frequently mentioned criteria were equity/fairness, efficacy/effectiveness, stakeholder interests and pressures, cost-effectiveness, strength of evidence, safety, mission and mandate of the health system, organizational requirements and capacity, patient-reported outcomes, and need. In a study conducted in four European countries in 2003/2004, Hurst et al. studied the priority criteria to which European internal medicine specialists and general practitioners give the most weight (Hurst et al. 2006). They found that the most frequently mentioned criteria for rationing were a small expected benefit, low chances of success, an intervention intended to prolong life when quality of life is low, and a patient over 85 years of age. Kapiriri and Norheim explored stakeholders' acceptance of criteria for setting priorities for health care systems in Uganda (Kapiriri and Norheim 2004). They divided the criteria as patient-related, disease-related, and society-related criteria. They found that there was a high degree of acceptance for commonly used disease-related criteria and society-related criteria, but less agreement about the patient-related criteria. Participating physicians varied most in the degree to which they tended to prioritize patient-related factors, particularly patient age, social status, personal responsibility for health status, gender, mental status and physical capabilities, area of residence, and lifestyle responsible for disease.

Normative evaluations and discussions of priority criteria have focused on relevance, legitimacy, and the trade-offs between different criteria. Norheim divided the most common medical and non-medical criteria among acceptable, not acceptable, and contested criteria (Norheim 1999, Norheim 2016). Several frameworks and decision-making tools have been presented to aid decision-makers when setting priorities. The need to include concerns other than efficiency and cost-effectiveness is increasingly accepted, and concern for equity and financial risk protection is now getting more attention by both policy-makers and donors (Baltussen et al. 2006, Baltussen and Niessen 2006, Kapiriri and Norheim 2004). A World

Health Organization (WHO) initiative developed guidance for health priorities, to help policy-makers include and evaluate concerns other than cost-effectiveness to make fair priority decisions (Norheim 2014). These criteria are listed in three groups; 1) Disease and intervention criteria, 2) Criteria related to characteristics of social groups, and 3) Criteria related to protection against the financial and social effects of ill health. These, and other criteria have been described in the discussion of fairness concerns in the context of universal health coverage (World Health Organization 2014, Chalkidou et al. 2016, Glassman, Giedion, and Smith 2017).

In low-income countries (LIC) with small health budgets and overwhelming needs among poor populations, priority setting can have dramatic impact on population health. Ethiopia, the second most populous country in Africa, with geographic, socio-economic, cultural, and religious diversity, typifies the problem. As reported in 2015, the per capita health expenditure is 24.3USD/year (Compared to 9536 USD/year in the USA and 471 USD/year in South Africa) (World Bank 2014). About one third of the population lives on less than $1.90 a day, and 37.7% of the health care expenses in Ethiopia are financed by direct out-of-pocket expenditures (World Bank 2016). The country is undergoing rapid development—Ethiopia aims to become a middle-income country by 2025. Impressive investments have been made in the health-care sector, but there is still a substantial gap between need, demand, and supply of health care (Federal Democratic Republic of Ethiopia Ministry of Health 2017). Clear priorities have been set through Ethiopia's health plans by specifying essential health care and primary health care services delivered by Health Extension Workers (Adamasu, Balcha, and Getahun 2016). At this stage, this implies that costlier and more specialized services like intensive care, dialysis treatment, and general hospital services are assigned lower priority for public funding. In Ethiopia, out-of-pocket expenditures influence the likelihood of seeking

healthcare and are a cause of poverty, and the Ethiopian Ministry of Health is now developing a strategy for universal health coverage (Wang and Ramana 2014).

Defaye et al. have previously documented that Ethiopian physicians make multiple priority decisions on a daily basis (Defaye et al. 2015). Physicians have few or no written guidelines or policies to instruct them on how to prioritize delivery of care when need exceeds supply; a first come, first served strategy is often used. In the absence of clear, written, guidance, we are interested in examining their reported ethical dispositions, but we do not intend to normatively evaluate if these are in line with common ethical principles or more specific ethical norms in the Ethiopian society." In this paper, we explore which of the priority-setting criteria Ethiopian physicians are likely to give more or less weight in making their decisions to provide costly but beneficial treatment to their patients. We interpret the results in the context of the Ethiopian setting and compare them to findings from less resource-scarce contexts.

Methods

Study design, participants, and setting

The analysis reported here is based on the nation-wide, cross-sectional survey of physicians working in public hospitals in Ethiopia, including specialists, GPs, and residents in various specialties with more than one year of clinical experience, which has been reported in part previously (Defaye et al. 2015).

Sampling procedure

Ethiopia is divided into 11 region states characterized as being urban, rural or pastoralist. We randomly selected two urban, two rural, and two pastoralist regions for study inclusion. Most

of the specialists work in Addis Ababa; this region was therefore purposively included. Stratified probability sampling was conducted and weighting was done according to the numbers of hospitals in each region. In all, 49 hospitals were included; at each of these, all physicians working at the time of the study were invited to participate in the survey.

The questionnaire

The questionnaire addressed various aspects of ethical dilemmas faced by physicians in Ethiopia, and the majority of the questionnaire focused on experiences of working in a context with resource scarcity and the perceived consequences, such as unavailable and rationed services, the resulting criteria used, and strategies required to handle limitations and protect against catastrophic health expenditures. The questionnaire is available upon request from the authors.

Parts of the questionnaire that focus on ethical dilemmas, resource scarcity, and criteria were developed from a previously validated tool used in the US and four European countries (Hurst et al. 2006, Hurst et al. 2007). The questionnaire was contextualized through cognitive testing, pilot testing, reformulation of unfamiliar terms, inclusion of context specific issues, and attention to preferences of the pilot study respondents regarding data collection modality, language, and timing.

The analysis reported here is based upon the following survey item: “One of your patients would benefit from an intervention. This intervention is very expensive. Under these circumstances, which factors/reasons make you more or less likely to use this intervention?” Respondents were asked to consider 25 characteristics of the patient, the treatment or other concerns (see Table 2). The list of criteria was initially selected based on multiple discussions

of concrete priority setting dilemmas among a group of 22 experts in various medical fields in Ethiopia. The initial list of criteria was then pilot-tested among a selected group of physicians at various departments, hospital levels, and with differing years of experience.

Data collection

Physicians were recruited in their departments at the end of their morning meetings or at their work place in the period of July–November, 2013. One of the authors (FBD) visited participating hospitals to recruit participants and gave them written information explaining the aims of the study, a consent form to be signed separately, and an envelope with the self-administered questionnaire to be returned anonymously.

Statistical analysis

Data were coded and entered using EPI INFO. The goal of the analysis was to describe which and how often the criteria were used for decision-making by physicians and to identify explanatory variables that are most associated with tendencies to prioritize more or less. A weighted ordinal logistic regression model was the basis of this analysis. The weights used have been described in the previously published paper (Defaye et al. 2015). The selection of explanatory variables was based on a sequential process of variable elimination using the Schwarz Bayesian information criterion (SBC) (Beal 2007). The statistical software SAS version 9.4 (Cary, North Carolina, USA) was used.

Twenty-five criteria were listed with five possible response options ranging from “Much more likely” to “Much less likely.” Twenty-one criteria were used to define the following ten “tendencies” (Table 1).

(Table 1 insert here)

The points assigned to each possible response ranged from –2 to +2, in the direction of making each tendency greater, the greater its average score. For example, for the criterion, "The patient is a child," which is used for the tendency to prioritize the young, "Much more likely" was assigned +2, and "Much less likely" was assigned –2. On the other hand, for the criterion, "The intervention has low chance of success," which is used for the tendency to prioritize efficiency, "Much less likely" was assigned +2, and "Much more likely" was assigned –2. Each tendency was analyzed as an ordinal variable based on the average of the sub-questions that define it. The average was categorized into five ordered levels: 1) $-2 \leq$ average < -1.2; 2) $-1.2 \leq$ average < -0.4; 3) $-0.4 \leq$ average $< +0.4$; 4) $+0.4 \leq$ average $< +1.2$; 5) $+1.2 \leq$ average $\leq +2$.

Nine candidate explanatory variables (or x-variables) were considered: Hospital level (primary, general, or specialized); Gender (female or male); Age (continuous); Years in practice (continuous); Working as a general practitioner (GP), resident, or specialist; Location of practice in government institutions only or other institutions as well (dichotomized); Participation in decisions regarding hospital resources (yes/no); Region type (urban, rural, or pastoralist); Frequency of feeling under pressure to deny, because of lack of resources, an expensive intervention that the physician thought was indicated (daily, weekly, monthly, once in 6 months, never, or not applicable).

Ethical considerations

The research was conducted in accordance with the principles of the Helsinki Declaration. There were no known risks for the participants, and they did not directly benefit from

participation in this study. All participants gave written informed consent. Data were handled and analyzed anonymously. Study approval was obtained from the research ethics committee of Addis Ababa University College of Health Sciences and the US National Institutes of Health, and exempted by the Norwegian Regional Committee for Medical Research Ethics.

Results

Respondent characteristics

Of the 640 distributed questionnaires, 587 responded (response rate 91,7%). Physicians with less than one-year of service were excluded and final analysis was done on 565 surveys. Within each form received, some questions were not answered, and the tables indicate the individual response rate for each question of interest in this paper. According to the 2012 Health and Health Related Indicators from the Ethiopian Ministry of Health, there were approximate 1544 practicing physicians (938 general practitioners and 606 specialists) in Ethiopia and 116 hospitals in 2012 (Federal Democratic Republic of Ethiopia Ministry of Health 2012). Our survey thus included about 38% of all physicians and 42% of the total number of hospitals in the country, as registered in 2013.

Most respondents were men (78%) who were young and had less than six years of medical practice (Table 2). Half of them were general practitioners, while approximately one quarter were specialists and one quarter were residents. More than one third of them reported working in a private practice, while fewer reported being involved in planning and decision-making at the hospital in which they worked.

(Table 2 insert here)

Participant responses regarding criteria for priority setting

Of the listed criteria, some were reported by physicians as increasing the likelihood that they would prioritize a patient, while others were reported as decreasing the likelihood or not affecting their medical decision. For many of the criteria, the responses varied substantially. In Table 2 we sort the listed criteria according to the scoring reported by 50% or more of the respondents and by identifying the criteria where the reporting varies the most.

(Table 3 insert here)

Among the criteria that were reported as increasing the likelihood of providing beneficial but costly treatment were the young age of the patient: if the patient was a child, adolescent or premature neonate or if the condition was attributable to pregnancy. If the purpose of the intervention was primary prevention, more priority would be given. Also, if the patient was the only economic provider in the family, 55% would give extra priority to him/her.

In contrast, less or much less priority was given if the expected benefit of the treatment to the patient was small, the treatment had low chance of success, or there was limited evidence about the effectiveness of the treatment.

The importance of a patient's position in society, attribution of the condition to the patient's unhealthy behavior, or long distance of the patient's residence from the site of care would not change the reported priorities for more than 50% of the respondents.

For the rest of the listed criteria, respondents varied in their scores.

Multivariate Analysis

In examining the association of various factors with prioritizing tendencies, the following factors stood out (Table 4).

(Table 4 insert here)

The type of hospital in which physicians worked was associated with the likelihood of prioritizing young patients (specialty hospital > primary hospital > general hospital). Younger physicians and physicians who engaged in some private practice were more likely than physicians who practiced in government hospitals exclusively to report prioritizing disadvantaged patients. Physicians who had been in practice for a shorter time, physicians who engaged in private practice, and physicians who were at certain types of hospitals (pastoralist > rural > urban) were more likely to report prioritizing more privileged patients. Younger physicians reported being more likely to prioritize patients with chronic diseases. Physicians who were older reported being more likely to give lower priority to patients who demonstrated unhealthy behavior. Physicians in various types of practice (specialist > resident > generalist) were more likely to prioritize efficiency. Physicians in certain regions (rural ≈ urban > pastoralist) reported being more likely to act as stewards of societal resources.

Discussion

Our results show that, as a whole, Ethiopian physicians' priority criteria largely match the Ethiopian government's stated priorities for child and maternal health through efficient and cost-effective interventions (Federal Democratic Republic of Ethiopia Ministry of Health 2015a, Federal Democratic Republic of Ethiopia Ministry of Health 2015b). Interventions with less efficiency, low benefit, and less evidence were less likely to be prioritized, again

matching the Ethiopian government's policies, as well as internationally agreed upon principles of fair priorities (World Health Organization 2014). The majority of respondents reported that they were indifferent to several of the contested or unacceptable criteria: the importance of the patient's position in society, the degree to which a patient is responsible for their health problems as a result of their own bad behavior, or the distance of the patient from the health care facility. At the same time, the reported priorities also indicate that many other factors may influence a decision-maker at the bedside. It is harder to say no to a person you know and it is hard to make a decision that may lead to serious consequences for a whole family. Overall there was substantial variation in our results, suggesting that multiple factors influence priority decisions, and that physicians weight them differently. The results may be explained by various contextual factors and personal characteristics of our informants. The contextual factors might be the influence of national and international policies and recommendations, the disease-burden the physicians have to handle, structural and health system factors as well as culture and norms in the Ethiopian society. Below we present our interpretation of what might cause the reported likelihood of giving more, less, or no change of priority to a patient.

Coherence between stated macro- and micro-priorities

Twenty years ago, Ethiopia had one of the highest children-under-5 mortality rates (U5MR) and maternal mortality rates (MMR) in the world. MMR and U5MR are key indicators of development in a country and through the Millennium Development Goals (MDGs) countries were encouraged to improve preventable causes of child and maternal death (Norheim et al. 2015). Substantial investments and development of maternal and child health services, improving competencies, and increasing the numbers of skilled health workers has occurred, and fortunately the indicators have shown rapid improvement during the MDG era (Victora et

al. 2016, Raducha et al. 2017). The clear priority of child and maternal interventions has been stated in health sector strategic plans, for essential health care packages, and in national treatment guidelines, and has been accompanied by targeted donor funding (Federal Democratic Republic of Ethiopia Ministry of Health 2015a, Federal Democratic Republic of Ethiopia Ministry of Health 2014). Therefore, it is not surprising that our respondents report that they are more likely to prioritize children and pregnant patients, and our results are in line with previous studies (Skirbekk et al. 2017).

The same holds for preventive interventions. The Ethiopian Ministry of Health has been clear about prioritizing cost-effective health services and preventive strategies (Federal Democratic Republic of Ethiopia Ministry of Health 2015b). Physicians' assignment of high priority to preventive interventions can also be explained by their lower likelihood of prioritizing treatments that are less efficient, less likely to yield benefit to the patient, or are less evidence-based. Most of the literature on priority setting recommends starting with the criteria of efficiency, cost-effectiveness, and severity (Norheim 2016, Persad, Wertheimer, and Emanuel 2009). An empirical study of what priority criteria European internal medicine and general practitioners are more likely to use shows the same tendency (Hurst et al. 2006). Among the European sample of physicians, 80% reported being less likely to give priority if the benefit to the patient was small or the chance of success was low.

Priorities following disease-burden

The great likelihood of reporting giving priority to children and lower likelihood of prioritizing old patients may be related to the patients that Ethiopian physicians are most likely to encounter in their clinical work. We therefore have to interpret this result with great caution. In Ethiopia, the demographic profile skews to the very young, and few individuals

have a life span above 75 years. Average life expectancy is currently 64 years. Although there have been great improvements in maternal and child mortality, as well as reduction in deaths due to infections, mortality from these conditions still account for almost half of all deaths in Ethiopia (Misganaw et al. 2017a, Misganaw et al. 2017b).

As far as we know, rationing by age as a separate criterion has not been a policy recommendation in Ethiopia. Internationally, age has been a much-contested priority criterion, and one of the arguments for setting priorities on the basis of age is the concern for how the youngest have the most to lose in terms of life-years (Ottersen, Mæstad, and Norheim 2014, Ottersen et al. 2008). Therefore, priority to the youngest is understood as giving priority to the worst off, which many accept as an important principle for fair allocation of scarce resources (Persad, Wertheimer, and Emanuel 2009). Although some ethicists support this criterion, others argue strongly against it or point out that age indirectly affects other accepted criteria (Ottersen, Mæstad, and Norheim 2014, Daniels 1983, Ottersen 2013). Although old patients are not given as high priority as children by some in our study, a substantial number of respondents would prioritize patients over 75 years or would consider age a neutral factor. This is quite different from the corresponding European study from 2006, in which as many as 70% said they were less likely to give priority to a patient over 85 years (Hurst et al. 2006). That our informants had fewer reservations about providing for the elderly might be related to the fact that there are few old people, but also the fact that respect for the elderly in Ethiopian society might be more prominent than in a European setting.

The current disease burden in Ethiopia might also explain the more neutral responses from our respondents on the criterion of responsibility for health status due to unhealthful behavior and the criterion of patients in need of chronic care. Ethiopian physicians do not see these

patients as often as physicians in other settings where non-communicable diseases (NCDs) are more common and chronic services are well established. On the other hand, their neutrality might also reflect that the majority of physicians are indifferent to patients´ "responsibility for their own health," as the majority of patients coming to public hospitals are poor and their health care status and health behavior are heavily influenced by their socio-economic status. This result mirrors the findings of Hurst et al, and might be an illustration of how physicians in general are reluctant to blame their patients for their disease. While our informants are neutral or give slightly more weight to cognitively-impaired patients, the opposite is shown among their European colleagues (Hurst et al. 2006). Among European physicians, only 5% were more likely to prioritize cognitively-impaired patients, 45% indicated no difference, but 50% assigned less weight, which is in line with the literature showing that biases present in society are also found among health professionals (Fitzgerald and Hurst, 2016). We have no data that can clarify our finding, but speculate that Ethiopian physicians in one way or another try to resist and contradict biases presented in the society against cognitively-impaired individuals. In Miljeteig and coauthors' studies from Indian neonatal units, health workers reported extra support to disabled girls in order to avoid the stigma against disability and female gender in the society (Miljeteig et al. 2009). We also speculate that the opposite findings from Hurst's study can partly be explained by physicians interpreting "cognitively impaired" due to the differently due to differences in the prevalence of cognitive impairment in Europe and Ethiopia; while European physicians might have elderly dementia patients in mind, while our physicians rather might imagine young, disabled children or mentally ill young people who are gravely discriminated against and stigmatized in their society? Further research is needed to get a better understanding of this.

Structural and health system factors affect priorities

Non-medical characteristics of the patients seem to influence our respondents' priorities. The reported high priority given to patients who are the only economic provider, the lower priority given if the patient cannot work again and the diverging priority to the poverty status of the patient, all point to physicians' concern for the economic status of family members who are affected by their medical decisions. The influence of the poverty status of patients on physicians' priorities is also found in other studies from low-income countries (Kapiriri and Martin 2007). In a setting without a welfare state, which is the case in Ethiopia, the fate of a family depends on the productivity of family members. Defaye et al., in another paper based on this survey, describe the strong commitment Ethiopian physicians report in protecting against catastrophic health expenditures and how they have multiple strategies to provide financial risk protection for their patients (Defaye et al. working paper).

Human response and cultural norms

It is easier to give high priority to identified lives than to statistical lives, even when this involves deviating from agreed upon priority principles (Cohen, Daniels, and Eyal 2015). Physicians are known to have problems with saying no to a patient in front of them with clear unmet health needs and who in addition ask for help (Carlsen and Norheim 2005, Daniels 1986). On the other hand, weaker patient groups and patients with low socio-economic status tend to lose out in such cases. Still, it is a very human response to try to help if someone asks. In the Ethiopian culture virtues of beneficence, generosity, and commitment are well known.

While the majority of physicians in our study report not being affected by a patient's important position in society, and a large proportion also report not changing priority if the patient is a colleague, friend or family member, or urges them for the intervention; a

substantial minority of our respondents did give priority to these criteria. Obligations towards family and friends are very strong in Ethiopia (Biru et al. 2015).

Our study findings prompt such pressing questions as these: Is assignment of high priority to patients who can work and are economic providers ethically justifiable in a setting without developed welfare systems? How should clinicians prioritize an increasing number of NCD-patients and elderly patients in countries where there has been such an emphasis on reducing mortality of younger patients and eliminating communicable disease? The results of this study identify pressing ethical questions that need to be addressed in many countries.

Variability of priorities

In our multivariate analysis, we find several factors that are associated with Ethiopian physicians' tendencies to prioritize. While some of these associations are not surprising, some of them differ from what we might expect. For instance, it is not entirely surprising that younger physicians are more likely than are older physicians to report prioritizing patients with chronic disease. We might speculate that this is the case because older physicians have seen more cases of patients lost to follow up or who are unable to cover additional treatment costs (like transport, special food, drugs, etc.), and therefore are not willing to use limited resources that will not lead to huge health benefits. In pastoralist regions, there are few hospitals and few private alternatives. Physicians there might feel more pressured, and more at risk of harassment if they deny priority to VIPs or family members. This might explain their response to give more priority to privileged patients, as opposed to the response of physicians in urban areas. It is not very surprising that physicians who are in private practice might give higher priority to privileged patients. In contrast, it seems surprising that physicians who engage in private practice would be more likely to give high priority to

disadvantaged patients than would physicians who works exclusively in government hospitals. Could it be because those who work in the private practice, in addition to their government job, have more in-depth knowledge of the lack of alternatives available to these patients? While they may think that government institutions should first and foremost be there for the poor, they may be in a position to cross-subsidize poor patients. Or, it could be that physicians who work both in the public and private sector perceive all or most of the patients they see in government hospitals as disadvantaged compared to those they see in private hospitals and therefore respond as they do. In contrast, those who only work in government hospitals have no privileged patients to compare and therefore differentiate from the disadvantaged patients they see. As we did not ask physicians to explain responses, the reasons for these responses remain to be explored in future research.

Strengths and limitations of this study

To our knowledge, this is the only study of its kind; including a representative sample of physicians in a LIC and exploration of their reported treatment priorities. This paper is part of a larger study on ethical dilemmas and decision-making among physicians in Ethiopia, aiming to understand more about what is going on at the ground level. We had a large response rate in our study, and we presume that our results are generalizable, not only to Ethiopia, but also to other countries where resources are scarce, guidelines are few or non-existent, and many decisions are left for clinical decision-makers to handle. In our study, the average age of the physicians was only 31, and they had few years of practice. While this could be understood as our study is skewed to include less experienced physicians, it is not. Until the last decade, physicians have been a particularly scarce resource in Ethiopia, but as part of the country´s major effort to improve health, strategies to increase numbers of physicians were implemented. The numbers of medical faculties have increased from 9 to 28 in the country,

and when we collected our data the first new batches of doctors had started working. We acknowledge that our results should be read with a critical eye: first of all, these are self-reported data. We do not know what these physicians do in actual practice; we only know what they say that they do. Other methods, such as observation studies, must be conducted to find out the specifics. Still, we hope that our study gives some perspectives on the priorities and reasoning of physicians in a setting like Ethiopia.

Conclusion.

In this paper we present the results of a survey of Ethiopian physicians, in which they report how various concerns and criteria influence their medical decisions. Ethiopian physicians work in a context with a high burden of disease, high volume of patients, and resource scarcity. Our results show great heterogeneity in what they consider important when deciding to allocate resources. In a setting with few guidelines for distribution of scarce resources, our results might indicate that similar cases can be treated differently depending on the decision-makers' judgments. In this paper we do not offer normative evaluation of the ethical acceptability of their reported priorities, but would like to point out the theoretical vacuum of discussions on how decision-makers at a clinical level in low-income settings should make allocation decisions. Normative discussions of acceptable contextual adjustments and clarifications of legitimate priority criteria used at the clinical level are needed in low-income settings such as Ethiopia.

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Overarching criteria:	**Spesific Criteria**
Young patients	• The patient is a child • The patient is adolescent
Disadvantaged patients	• The patient is poor • The patient is cognitively impaired • The patient lives far away • The patient will not work again
Privileged patients	• The patient has an important position in society • The patient is a colleague, friend or family • The patient urges for the intervention
Patients who need chronic care	• The condition requires chronic care
Patients with healthy behavior*	• The condition is attributable to patient´s unhealthy behaviors like smoking, excessive drinking, etc.*
Implementation of national program	• The patient is in a prioritized national program (like HIV, TB) • The condition is attributable to pregnancy • The intervention is primary prevention
Elderly patients	• The patient is old (> 75 years)
Efficiency	• The intervention has low chance of success • The benefit to the patient is small

	• While you think the patient would benefit, the evidence base for the intervention is lacking
Treatment where cost is covered by government	• The cost of the treatment is covered solely by the government
Treatment where family finances are influenced	• The patient is the only economic provider in the family • The cost of the treatment is covered solely by the patient himself

*Table 1: The 25 listed priority criteria categorized in the ten overarching criteria to give more or less priority to the patients. *Reversely tabled than in the analysis*

	N (%)
Women/Men (N = 563)	118/445 (21/79)
Age group (N = 555)	
< 31	377 (68)
31-40	117 (21)
41-50	50 (9)
> 50	22 (4)
Undergraduate medical training Ethiopia (N = 551)	518 (94)
Postgraduate medical training Ethiopia (N= 278)	261 (94)
Years in practice ((N = 540)	
1-5 years	378 (70)
6-10 years	81 (15)
11-20 years	49 (9)
>= 21 years	43 (8)
Professional status (N = 556)	
GPs	272 (49)
Specialists	133 (24)
Residents	150 (27)
Have private practice (N = 565)	214 (38)
Involvement in medical academics (N = 518)	373 (72)
Involvement in planning and decision-making at the hospital (N = 559)	157 (28)

Table 2: Characteristics of study participants. Percentages may not add up to 100% because of independent rounding.

Table 3. Criteria sorted by grouping the criteria with more than 50% of respondents reporting giving more, less, or no change likelihood in weighting the listed criteria, followed by the criteria where reporting varied the most spread or varied in score.

Priority criteria	More likely* (%)	No change (%)	Less likely (%)	Nonmissing responses (*n*)
>50% of responders report *more* likely to prioritize				
Patient is a child	76	18	6	521
Condition is attributable to pregnancy	72	9	9	513
The patient is adolescent	70	23	7	523
Intervention is primary prevention	69	21	10	514
Patient is the only economic provider in the family	33	33	12	520
Patient is a premature neonate	51	26	23	513
>50% responders report *less* likely to prioritize				
Benefit to the patient is small	23	11	66	512
Intervention has low chance of success	25	14	62	514
While you think the patient would benefit, the evidence base for the intervention is lacking	31	19	50	513
> 50% responders report *no change* in priority setting				
Patient has an important position in society	33	56	11	518
Condition is attributable to patient's unhealthy behaviors like smoking, excessive drinking, etc.*	22	53	25	510
Patient lives far away	37	51	12	514
Heterogeneity in responders' reports				
Patient is poor	37	29	34	520
Aim is to improve quality of life in a patient whose life expectancy is short	38	22	40	514
Aim is to prolong the life of a patient whose quality of life you judge to be low	34	25	41	513
Patient will not work again	24	35	40	509
Patient is old (>75 years)	29	31	40	520
Condition requires chronic care	28	33	38	513
Patient is cognitively impaired	31	47	22	514
Cost of the treatment is covered solely by the patient himself	32	47	21	502
Cost of the treatment is covered solely by the government	45	44	11	517
Patient is in a prioritized national program (like HIV, TB)	43	47	10	518
Patient urges for the intervention	47	44	10	515
Patient is a colleague, friend or family	48	44	8	521
Patient has a rare condition	34	45	21	510

*For some of the criteria the total do not sum up to 100% due to rounding.