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WHO Decides What is Fair?

International HIV Treatment Guidelines,
Social Value Judgements and Equitable
Provision of Lifesaving Antiretroviral Therapy

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WHO decides what is fair?
International HIV treatment guidelines, social value judgements and equitable provision of lifesaving antiretroviral therapy

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Abstract

The new 2013 WHO Consolidated Guidelines on the Use of Antiretroviral Therapy (ART) make aspirational recommendations for ART delivery in low and middle income countries. Comprehensive assessments of available evidence were undertaken and the recommendations made are likely to improve individual health outcomes. However feasibility was downplayed, the Guidelines represent high-cost policy options not all of which are compatible with the core public health principles of decentralization; task-shifting; and a commitment to universality. Critically, their impact on equity and the population-level distribution of health outcomes were not fully considered.

We analyze the likely distribution of health outcomes resulting from alternative ways of realising the 2013 Guidelines and assess practicality, feasibility and health attainment amongst different sections of the population in the context of financial and human resource constraints. Claim can be made that direct interpretation of the Guidelines follows a "human rights" based approach in seeking to provide individual patients with the best alternatives amongst those available on the basis of current evidence. However, there lies a basic conflict between this and "consequentialist" public health based approaches that provide more equal population-level outcomes.

When determining how to respond to the 2013 Guidelines and fairly allocate scarce lifesaving resources, national policymakers must carefully consider the distribution of outcomes and the underpinning social value judgements required to inform policy choice. It is important to consider whose values should determine what is a just distribution of health outcomes. The WHO Guidelines committees are well placed to compile evidence on the costs and effects of health care alternatives. However, their mandate for making distributional social value judgements remains unclear.

1.   Introduction

The recently released 2013 World Health Organization (WHO) Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection continue to inform global norms and standards guiding public sector approaches to ART treatment and care in HIV/AIDS epidemics in low and middle income countries(WHO 2013a). The Guidelines were developed through a broad and consultative process in which four Guideline Development Groups (for Adults; Maternal and Child Health; Operational and Service Delivery; and Programmatic Issues) based their deliberations and ultimately decisions on evidence provided from multiple sources: systematic reviews and supporting evidence; modelling and cost-effectiveness studies; and community values and preferences. The importance of three core principles of the public health approach to ART (Gilks et al. 2006) were highlighted: standardisation of therapy into first and second line regimens; simplification of patient monitoring and treatment approaches; and decentralisation through task-shifting of simplified and standardised ART delivery. The main target audience of the Guidelines remains national planners and policymakers. The breadth of work that went into the development of the Guidelines is impressive and the team in charge of the process deserve praise.

The key differences between the previous 2010 and the new 2013 Guidelines are summarized in Table 1. Broadly, the recommendations that have been revised are those that appear to be both the most effective for the treatment of patients and for the reduction in onward HIV transmission to partners on the basis of current clinical evidence. It should be noted however that the quality of clinical evidence for modifying the previous recommendations (WHO 2006; WHO 2010) is generally low, and that all the new recommendations come with significant additional costs.

Table 1: Key new recommendations in 2013 WHO consolidated HIV treatment guidelines

Topic	2010 WHO Guideline Recommendations	2013 WHO Guideline Recommendations	Quality of evidence supporting recommendations
When to start antiretroviral therapy	CD4 ≤ 350 - Irrespective CD4 for TB & HBV	CD4 ≤ 500	Moderate quality evidence
Patient monitoring when on ART	Clinical or CD4 monitoring Phase in of viral load testing	Viral load monitoring	Low quality evidence
PMTCT Interventions	Option A (AZT +infant NVP) Option B (triple ARVs)	Lifelong ART for all pregnant or breastfeeding women irrespective of CD4 count (Option B Plus)	Low quality evidence
When to start ART in children	ART initiated in all children under two years of age - Irrespective CD4	ART initiated in all children under five years of age - Irrespective CD4	Very low quality evidence
Paediatric 1st line ARVs	NNRTI based regimen	PI based regimen - regardless of NNRTI exposure	Moderate quality evidence

In selecting these particular approaches, from amongst all others that could have been recommended, the Guidelines send a clear statement of intent of seeking to close the gap between what is available for patients treated in the public sectors of low and middle income countries and the interventions patients typically receive with state support in higher income settings. This decision to 'close the gap in standards' has been widely welcomed by specialist practitioners, patient groups and advocates, particularly those from North America and Europe. However, not much attention has been given to the very different way in which ART is delivered in higher income settings, where physician choices dictate which initial and subsequent regimens are prescribed and how individual patients are then monitored - in contrast to the protocol and guideline-driven public health approaches routinely followed in resource-limited settings. In particular, it remains unclear how these approaches can be adapted to facilitate decentralisation and task-shifting – both critical to enable universal access to ART in resource constrained settings with few specialist physicians or well-equipped laboratories and patients having to travel large distances to access higher level health facilities at their own expense.

The 2013 Guidelines place additional demands (in terms of both human resources and financial costs) on health care systems already facing severe resource constraints and with other competing and equally compelling health priorities. Estimates of the financial costs of implementing the Guidelines remain uncertain (WHO 2013a; Eaton et al. 2014), but adopting the increase in the adult eligibility criteria alone has been estimated to increase the number of adults in need of ART globally from 16.7 to 25.9 million (Sabin et al. 2013). Currently there are an estimated 10 million people on ART globally, with coverage in sub-Saharan Africa of those classified as being in need based on previous (2010) WHO Guidelines (WHO 2010), being only 68% for adults (with CD4<350) and 32% for children (UNAIDS 2013). Coverage is even lower in some other regions with emerging epidemics (e.g. 22% coverage for adults in North Africa and the Middle East; 35% in Eastern Europe and Central Asia). Coverage estimates are based on the ratio of those on treatment to those in need (WHO 2013c) and hence risk portraying too rosy a picture of successes in scaling up ART since those without access die more quickly (and therefore reduce the denominator). [1]

The 2013 Guidelines are regarded as aspirational, aiming to drive further progress in access to high-quality and effective ART management for all who need treatment. However, the current inability of health care systems in low and middle income countries under the greatest burdens from HIV/AIDS to fully meet the treatment needs of their HIV infected populations brings into sharp focus distributional concerns related to the allocation of future HIV/AIDS resources, and how different policy decisions may affect the distribution of health benefits resulting from ART. The evidence incorporated into the Guidelines therefore needs to be assessed together with an awareness of social value judgements that policy choices based on the new recommendations would imply. The clinical and cost-effectiveness modelling and stakeholder consultation evidence informing the recommendation is reported in the Guidelines and elsewhere (WHO 2013a; Eaton et al. 2014; Keebler et al. 2014; WHO 2013b) (see Appendix for a brief summary). Results from the cost-effectiveness modelling exercises examining the costs and health benefits expected with different eligibility and monitoring policy choices are summarised in Table 2. In this paper our focus is on the role of social value judgements in supporting alternative ways in which HIV programme planners in resource limited settings could respond to the 2013 Guideline recommendations.

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[1] Perhaps a better metric would be the proportion of those in need of ART over the last five years (including those died) who are currently alive on ART.

Table 2: Recommendations from modelling and cost-effectiveness studies

Modelling and cost-effectiveness study topics	Main conclusions
Cost-effectiveness of alternative expansions of eligibility criteria	On the basis of assessing current uncertain evidence, raising the adult eligibility criteria to initiate ART from CD4<350 to <500 is expected to generate health benefits for patients on ART and reduce onward HIV transmission as long as all patients currently in care with CD4<350 are currently on ART. If the choice is between increasing the eligibility criteria from CD4<350 to CD4<500 cells for those currently in care, or expanding testing and linkage to care so that 80% of those in need at CD4<350 are identified and receive ART then increasing the eligibility criteria is likely to be cost-effective. However, there may be intermediate levels of resource availability in which prioritizing testing leads to greater population health gains (Eaton et al. 2014).
Cost-effectiveness of alternative approaches to monitoring patients on ART	Routine viral load testing is expected to be the most effective monitoring strategy for individuals on ART but comes at very high cost and set up costs are likely to be significant. Countries can be expected to maximize health gains by prioritizing expansion of ART to close to full coverage, firstly at eligibility criteria of CD4<350 and then at CD4<500, using existing or strengthened services for CD4 testing and clinical monitoring. Viral load monitoring is not expected to be cost-effective at current costs as long as gaps in ART coverage remain (Keebler et al. 2014).

2. Distributional concerns and notions of social justice

Fairly allocating scarce lifesaving healthcare is an area in which un-contentious 'correct' answers can rarely be found. It is important to recognise that determining which choices should be assessed as 'fair' are not analytical issues that can be resolved by the mathematical models and quantitative methods alone, rather they are social value judgements that may differ across individuals and populations (Culyer 2006).

A number of notions of distributive justice can be invoked to support alternative population health outcome profiles (Williams & Cookson 2000). We highlight and explain three contrasting approaches that may result from decision makers in resource constrained settings responding to the new 2013 HIV Treatment Guidelines. It is important to note that these are in no way exhaustive, and in fact represent just three points along a spectrum of alternative viewpoints. Figure 1 shows the remaining life expectancy of those infected with HIV or at greatest risk of infection split by population quintiles on the basis of 'ease of reach' to deliver required HIV interventions (i.e. those in care and in easily reachable urban locations are located on the left side of the plots; those out of care and/or in harder to reach rural locations are on the right. It is likely that those in harder to reach locations are also socio-economically more disadvantaged). The overall mean remaining life expectancy under each scenario, across representative populations in low or middle income countries, is also shown. While the plots in Figure 1 are stylised to highlight the trade-offs inherent in the alternative implementations of the Guidelines, they broadly reflect the evidence from the modelling studies used to inform the guideline development process (see Appendix and Table 2).

Our first interpretation of the 2013 Guidelines largely follows the human rights based approach. National policymakers could follow specialist clinician advice and choose to provide the 'best' interventions, judged as the interventions that offer the greatest benefits compared to other alternatives to an individual patient and their immediate associates. By implication, however, given human and financial resource constraints, it is impossible to provide the 'best' interventions to all those in need, thereby leaving many in the population with nothing more than the most basic care (Daniels 1993). This approach is implied by direct implementation of the new WHO 2013 Guidelines favouring a group of patients who could receive more individualised physician care, start ART earlier (based on CD4 threshold) and be supported by viral load monitoring. Although it may be deemed ethical to close the gap in treatment approaches between higher and lower/middle income countries, within a jurisdiction such an approach is usually incompatible with universal service provision and can lead to highly unequal outcomes. This is depicted in Figure 1(a); where we see the easiest to reach groups in the population achieve notable gains in remaining life expectancy, whilst the hardest to reach groups remain with very poor access to HIV testing and ART, resulting in an overall mean remaining life expectancy of 15 years in the population.
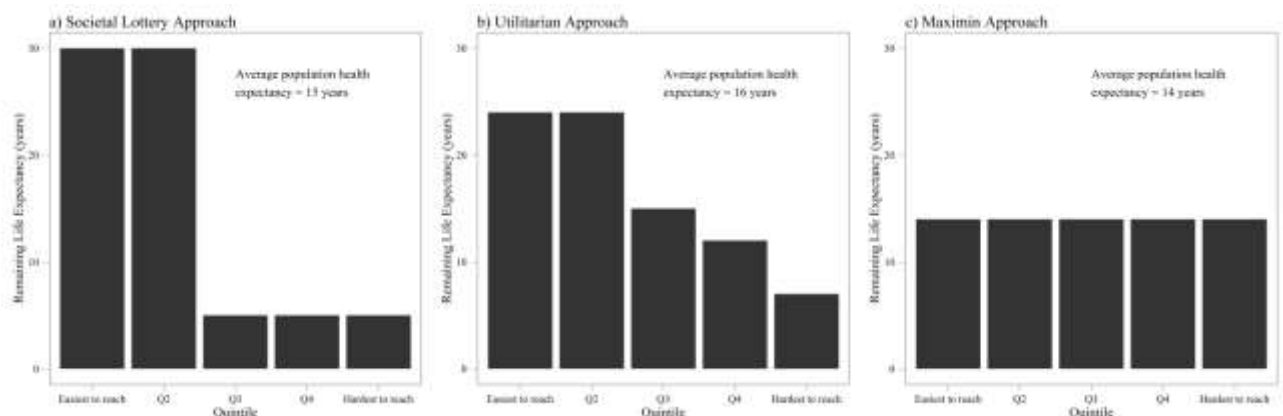

Figure 1: Distribution and sum total of remaining life expectancy arising from alternative social value judgements in implementing the new Guidelines

A claim to distributive justice, predicated on a fair process by which to select those that receive the best treatment available, can be made following this approach. A commonly cited example of one such fair process is a lottery in which an individual's chances of receiving the treatment do not depend upon their personal circumstances such as their socio-economic status or proximity to a national centre of excellence (Broome 1984), (Harris 1996). However, in practice, instead of a fair lottery, access is often allocated according to first come first served criteria, often based upon geographical location that tends to reinforce existing inequities in societies (Daniels 2004).

Our second interpretation of the 2013 Guidelines follows a utilitarian approach, as is usually adopted in cost-effectiveness analysis. Society may choose to maximize aggregate population health regardless of who gains from interventions provided (i.e. taking the stance that 'a DALY-averted is a DALY-averted' regardless of to whom it accrues). Whilst this approach is often assumed to be distribution invariant, it also implies a value judgement in allocating health care resources to those in whom there is the highest capacity to benefit per dollar spent (Culyer & Wagstaff 1993). Although this approach will generally result in more equal health outcomes, particularly compared to a lottery, fully equalized outcomes are unlikely to occur. Inequalities are notably likely to remain if some people with the worst health outcomes have low capacity to benefit and/or if providing interventions to some members of the population is particularly expensive or impractical (e.g. in remote and underserved areas). This approach is depicted in Figure 1(b). We see from the figure that while no group in the population benefits as much as those receiving the highest levels of care available under the lottery approach, health gains are spread across the population resulting in a higher overall mean remaining life expectancy of 16 years. In practice, a distribution of this type is most likely to result from a public health approach predicated on decentralisation, task-shifting, limited focussed CD4 laboratory monitoring (at least to prioritise ART initiation), and wide access to first and second-line ART (i.e. continuing the approaches currently contained in many low and middle income counties national ART guidelines and policies (WHO 2010; UNAIDS 2013; Kessler & Braithwaite 2013).

The final interpretation of the 2013 Guidelines we consider is where society chooses to focus efforts on improving the lot of the worst off in the population, and thereby adopts a 'maximin' principle (Rawls 1971). This implies concentrating resources on those expected to have the worst health outcomes regardless of their capacity to benefit and/or the costs faced to improve their health (Parfit 1997). Although this position is likely to ultimately lead to the most equal outcomes, because resources are finite, maximizing the lot of the worst off is often achieved only at the expense of notably reducing average health outcomes in the population (Hauck et al. 2002). Society must therefore decide the extent to which more equal outcomes should be achieved at the expense of reduced outcomes on average (Williams & Cookson 2006). This approach is depicted in Figure 1(c); we see that remaining mean life expectancy is distributed much more equally than under the other two approaches with greater health gains accruing to the hardest to reach groups. Overall mean remaining life expectancy under this approach is 14 years. This would be an extreme egalitarian position that is often hard to attain in practice, particularly in the lowest income countries with high income inequality and weak health systems.

A distribution of type depicted in 1(c) is very probably incompatible with the 2013 Guidelines, and even the 2010 Guidelines, in virtually all low and middle income countries. It could potentially be achieved by making a clear policy commitment to provide a basic universal package of HIV treatment and care – predicated on decentralisation, expanded testing, further task-shifting, use of clinical monitoring only, limiting eligibility to CD4<200 and only providing lower cost ARV regimens (i.e. the rather minimalist approaches in the 2006 Guidelines). It would also require substantial resources be devoted to implementation initiatives and perhaps incentives to retain patients in care. However, policy-makers would have to be willing to face potential reductions in overall population health to ensure benefits are realized by the hardest to reach.

3.   Interpreting the 2013 guidelines for national level policy-making

The 2013 WHO Consolidated HIV Treatment Guidelines represent a clear, indeed aspirational, statement of intent on the future direction of HIV treatment responses. Perhaps the most notable feature of the recommendations are that alternatives have been chosen that are deemed by the Guidelines Committees to be the most effective for individual patients on the basis of current but uncertain evidence despite being extremely high cost. The recommendations are likely to align most closely with the lottery-type distribution of health outcomes, although most probably on a first-come first-served basis relating to geographical ease of reach. They appear motivated by a desire to close the gap in the perceived quality of treatment available at the individual patient level between low and middle income countries and high income settings. However, within a particular jurisdiction - with existing gaps in service provision, access, and treatment coverage - their immediate implementation is likely to result in highly unequal health outcomes.

It should be noted that the 2013 Treatment Guidelines represent just the next step in a continuous process of updating the evidence base and evolving global norms and standards for ART delivery. They are intended to be followed by Programmatic Guidelines that tailor the recommendations to the prevailing situations in individual countries in order to update existing policies and National Guidelines. Nevertheless, the Consolidated Guidelines outline recommendations intended in some way to be "progressively realised" by countries. When developing their own plans national policymakers may find it difficult to substantially divert from what may become regarded as international standards, particularly if international donors were to make funding contingent on how closely country programmes adhere to the recommendations. The direct adoption of the 2013 Guidelines, without consideration of distributional effects within jurisdictions, could have tragic consequences for the many in need but not currently receiving ART.

In this paper we have outlined three notions of social justice, along a wider spectrum, that can be invoked when determining the appropriate expansion path for HIV/AIDS treatment programmes in low and middle income countries in response to the 2013 Guideline recommendations. We have also considered feasibility, particularly in the context of limitations in financial and human resources. None of these approaches are unequivocally 'right' or 'wrong', instead they rely upon the values of constituents to inform which decisions can be perceived as just.

An important question is therefore whose values should determine what is a just distribution of health outcomes. There appear to be at least three valid constituents to inform allocations within a particular jurisdiction: (1) Officials in national bodies with mandate for oversight of HIV programmes and/or national budgets (e.g. Ministries of Health, Finance, elected representatives) clearly have a valid claim; (2) Where a substantial amount of funding is from donor commitments (e.g. bilaterally from the Presidents Emergency Plan for AIDS Relief (PEPFAR), or multilaterally from the Global Fund for AIDS, TB and Malaria (GFATM)), then it seems reasonable that funders' values should also have some bearing over distributive decisions; and (3) People living with HIV, at risk of HIV, and more generally citizens within a jurisdiction where the guidelines will be implemented, also have a claim that their preferences be taken into account even if they do not usually have the same power as politicians, national authorities or funders to directly influence allocation decisions. Caution should however be exercised in reflecting the values of patient groups comprising only those currently on ART since such groups may be parochial and only value health gains to those currently on ART and not the wider population in need.

Whilst the WHO guidelines committees are groups tasked with interpreting the evidence and deriving recommendations, it is important to be cognisant that this task implicitly involves making distributional social value judgements. Since the committees are not directly accountable to those in need of ART within jurisdictions, nor do they directly provide funding, their mandate for making these value judgements remains unclear.

4.   Conclusion

We have argued in this paper that distributional social value judgements were made in deriving the 2013 WHO ART Guidelines and likewise need to be made by countries in deciding how to implement them. Whilst the most direct reading of the Guidelines would suggest a lottery approach be taken when implementing them, in many situations there is likely to be a strong preference from constituents for pursuing more inclusive and universal approaches. Policymakers within particular jurisdictions must carefully consider both the distribution of outcomes likely to result from how they respond to the Guidelines and the process by which to assess whether alternative distributions align with societal objectives. "More of the same" or even greater emphasis on the needs of the harder to reach, through continuing to roll out and increasing ART coverage using a clear public health approach already implicit in current national ART policies in most countries may be preferable to the selective adoption of a more individualised approach which can only benefit the few and risks reinforcing existing inequities in access to ART and associated care.

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Supplementary appendix

Review of evidence

The 2013 World Health Organization Consolidated Guidelines for HIV Treatment were developed through a broad and consultative process in which four Guideline Development Groups (for Adults; Maternal and Child Health; Operational and Service Delivery; and Programmatic Issues) based their deliberations and ultimately decisions on evidence provided from multiple sources (systematic reviews and supporting evidence, modelling and cost-effectiveness studies, and community values and preferences). The evidence on which the Guidelines were based is briefly assessed here.

1.   Clinical effectiveness of guideline interventions

The Guideline Development Groups placed a primary focus on evidence supporting the clinical effectiveness of alternatives under consideration. Evidence on clinical effectiveness was based on systematic reviews that followed the Population, Interventions, Comparisons and Outcome (PICO) format. The quality of evidence was then assessed using a standardized Grading of Recommendation Assessment, Development and Evaluation (GRADE) approach (WHO 2013a), (Guyatt et al. 2011). The quality of evidence behind the key recommendations was moderate at best (Sabin et al. 2013).

Despite the concerns about the quality of the evidence and the lack of practical considerations about scale-up and decentralised implementation, there did appear to be general clinical consensus that the recommendations contained in the Guidelines were effective alternatives for treating patients and reducing onward transmission. Interestingly, there was no evidence that the existing public health approach was inferior to individualised specialist care in terms of survival or retention in care.

2.   Modelling and cost-effectiveness studies

All of the 2013 recommendations represent high cost strategies with considerable human resource implications: increasing the eligibility criteria implies additional treatment costs of treating those with CD4 between 350 and 500 at a cost of >$100 per patient year; monitoring patients with viral loads is likely to cost around $45 per test as compared to $12 per test when using CD4 tests or simply the cost of a clinic visit with clinical assessment (Keebler et al. 2014) and requires a quantum increase in laboratory technology as well as technicians; lifelong ART means providing expensive ARVs to mothers not in clinical need of ART between and after pregnancies; and switching to a LPV/r paediatric ARV regimen from an NNRTI based regimen would raise the costs of paediatric ARVs approximately three-fold (Prendergast et al. 2012) as well as adding considerable logistic challenges in drug supply chains (as this drug is available for infants only as a syrup requiring cold chain) and also further complexity for viable second-line options. The new Guidelines will also prove more challenging in terms of achieving universal access through wider decentralisation and deeper task-shifting because they require more rather than less specialist care, physician contact and supporting laboratory infrastructure.

Given both the potential increase in effectiveness and evident increase in cost implied by the recommendations in the 2013 Guidelines, two major cost-effectiveness studies were undertaken by several modelling groups, under the umbrella of the HIV Modelling Consortium, on: (1) alternative eligibility criteria for adults; and (2) alternative adult patient monitoring strategies (see Table 2 for the main results) (Keebler et al. 2014), (Eaton et al. 2014). The analyses took as their objective the maximization of population health from available resources, regardless of whom additional 'health' accrues to (health was measured in terms of disability adjusted life years (DALYs) averted). Despite this lack of distributional focus both studies highlighted the importance of equity concerns and recommended these should be an important additional consideration in the formulation and interpretation of the Guidelines.

3. *Community values and stakeholder preferences*

The development of the Guidelines was undertaken in a consultative manner with input sought from people living with HIV/AIDS, community representatives, health care workers, national decision-makers and international funders. Extensive work in particular was focused on understanding stakeholder values and preferences. This work stressed a rights based approach in which access to health interventions that can lead to health improvement for patients was seen as a fundamental human right that must be provided. However it also recognised that in the context of resource constraints it is likely that priority will often have to be given to those who are most ill and not currently on ART, who cannot routinely visit a physician or access laboratory services.