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Priority setting and HIV/AIDS: Formulas and processes

Chris Desmond

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The Administrative Officer
Centre for Social Science Research
University of Cape Town
Private Bag
Rondebosch, 7701
Tel: (021) 650 4656
Fax: (021) 650 4657
Email: Kathleen.Forbes@uct.ac.za

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Introduction

Economic evaluations alone cannot determine how much should be spent on combatting HIV/AIDS or how that money should be spent. Allocating resources cannot be reduced to a technical exercise. Priority setting involves a range of value judgments and requires a process which provides legitimacy. Economic evaluations should, however, play a central role in such a process. They highlight the trade-offs which have to be made in resource constrained environments, and can draw attention to the value judgments which have to be considered when making these trade-offs. In the absence of sound economic evaluation other factors which shape priorities may have undue influence.

This discussion paper examines the role of economics in HIV/AIDS priority setting, with a view to identifying research priorities. Specifically the paper will examine how economic evaluations of existing and candidate interventions can inform resource allocation decisions. The paper focuses on allocation decisions of responding governments, although the role of donors and other actors will also be considered. The allocation decisions of responding governments can be divided into three stages:

1. Allocations to relevant ministries from the ministry of finance
2. Allocations from ministry budgets to HIV/AIDS programmes
3. Allocations to specific HIV/AIDS interventions within HIV/AIDS budgets

HIV and AIDS require a multi-sectoral response and a variety of different ministries need resources to implement interventions. The literature, however, has dealt primarily with allocation decisions associated with ministries of health. This paper similarly focuses on the health sector. The paper's emphasis is simply a reflection of the focus on the healthcare sector in the literature and is not an endorsement of the return to the 'core business' of prevention and treatment many HIV/AIDS organizations lean towards when faced with priority setting exercises – a tendency which leaves care and support unsupported.

To date the literature examining resource allocations for HIV/AIDS has largely focused on stage 3. Resource allocation tools/models and investment

frameworks have been developed to help guide decision makers towards the efficient use of available HIV/AIDS resources (stage 3), although in some cases they are also used to make the case for additional resources (stage 1/2). The literature and available models provide a valuable resource for policy makers. Of concern, however, is the extent to which there has been a tendency to try and reduce priority setting to a technical exercise as this can alienate policy makers. It is tempting to view the stages as progressively more technical and there is some truth to this, but the progression is not such that stage 3 does not involve value judgments. Indeed, process and legitimacy issues stretch over all three stages. What is worrying is that as international resources for HIV/AIDS stagnate or decline and stages 1 and 2 become increasingly important, the technical focus will leave the HIV/AIDS community ill equipped to support countries with the difficult value judgments which have to be made. To support these stages requires a better understanding of the priority setting process, how it is shaped by context and how to ensure that economic evaluations are given due consideration. Moreover, it requires that connections with broader priority setting process, and efforts to support these processes, be strengthened. Considerable effort has been expended to strengthen planning and priority setting for health and other relevant ministries. While HIV/AIDS priority setting, due to the scale of interventions or the extent of external funding, has often run in parallel to broader priority setting processes, this may no longer be possible as demands on domestic funds increase.

This is not to suggest that the technical aspect of resource allocation decisions is not important, or that processes have been thus far ignored. Technical aspects are critical and research which provides better data and better ways of using it is indispensable. Technical analysis can help donors and implementing governments to identify potential efficiency gains. The technical support does, however, need to be complemented with renewed effort to support and strengthen the priority setting processes, and ensure the inclusion of economic evaluations within that process. If this is not done, economic evaluations will likely have limited or no impact – particularly on the allocation of domestic resources.

To date, with only a few exceptions, economic evaluations do not appear to have played a major role in resources allocation decisions related to HIV/AIDS. Countries with similar epidemics and similar socio-economic contexts have been observed to spend money in very different ways, which suggests that a systematic assessment of how best to spend money has not been done, or has not been considered (Forsythe, Stover and Bollinger, 2009). A number of reasons have been given for this outcome, they include: lack of data, lack of in-country technical capacity, contradictory messages on which interventions work, unwillingness to target certain population groups, inefficient planning and

implementation, and donor influence. As a result, policies may often reflect political motives and wishful thinking, or simply historic spending patterns (i.e. past political motives and wishful thinking) (Forsythe, Stover and Bollinger, 2009). Even simple cost considerations are often ignored, with costing only occurring after decisions have been made. Without a consideration of costs and other resource constraints, strategic plans become a wish list – with no planning for what to do if there are insufficient funds available to implement the plan in its entirety. Then, when resources are insufficient, the decisions on which aspects of the plan to implement are often made in an ad hoc manner and reflect the priorities of those with influence over budgets (Hester et al, n.d.).

The most pronounced consequence of a failure to consider economic evaluations in the priority setting process is that responses tend to be inefficient. Economic evaluations are good at identifying how to spend resources to reach a given goal efficiently. Ignoring the information on relative efficiency leaves policy makers free to spend on less cost effective interventions. This has been argued to contribute to funding for prevention lagging behind funding for treatment (Alistar and Brandeau, 2010). Moreover, disregarding information of the relative efficiency of interventions has been argued to contribute to the failure to adequately fund interventions for most at risk populations, particularly when they are stigmatized. An explicit focus on how much more efficient interventions for most-at-risk populations (say drug users) are when compared to those for the general populations, makes it more difficult for policy makers to justify ignoring these cost-effective interventions.

Actors and context

Before moving on to a discussion of the three stages of the priority setting process, it is useful to consider the various actors involved. The in-country priority setting process can involve a wide range of actors, including: the executive branch of government, ministry of finance, ministry of health, ministry of welfare, ministry of education, civil society groups, community organisations, the courts and donors. The socio-economic and political context plays a role in the way in which these actors interact. The level of press freedom, national income, income parity, ethnic diversity and traditionalism, for example, have all been argued to shape HIV/AIDS policies (Peiffer and Boussalis, 2010).

The role of donors in the policy making process has received significant attention in the literature on health policy. It has been argued that donors distort national priorities for health. Esser and Bench, for example, have argued that donors often have a distortionary effect as their funding priorities for recipient

countries do not reflect the burden of disease profile of those countries (2011). Others have argued that donor influence can even prompt governments to skew the spending of domestic resources towards donor priorities (Sridhar and Gomez, 2011). The approach to funding is likely to have a significant effect on the extent to which donor funding distorts national priorities. Sector-wide approaches, for example, are likely to have less effect than funding for specific interventions (Kapiriri, 2012). Specific to HIV/AIDS, Forsythe, Stover and Bollinger have suggested that large-scale, external funding may have prompted some countries to be less concerned about priority setting (2009).

The impact of donor funding on domestic priorities is, to a large extent, likely to be determined by the scale of donor funding relative to available (and committed) domestic funds. Globally donors are estimated to contribute just under half of HIV/AIDS funding. However, in low income countries (both high and low prevalence) donors are funding more than 90% of HIV/AIDS programs, but the importance of donor funding declines as GDP per capita increases (Haacker and Greener, 2011). The impact on priority setting of donor priorities is, therefore, likely to be far larger in low-income countries. Moreover, if donor funding in the future is cut across the board, HIV/AIDS programmes in low-income countries will be much harder hit.

Given the extent of donor involvement, particularly in the highly affected sub-Saharan African region, it is worth considering whose priorities *should* be reflected in national plans. Kapiriri discusses the extent to which donors can legitimately influence priorities (2012). She points out that donors are not elected by the host country, are not representative of the people they seek to serve and may not respect local values. However, she also notes that it is their money and they have a responsibility to reflect the values of their tax payers (or benefactors/contributors in the case of non-governmental donors). It would seem, therefore, that donors do have a legitimate right to be involved in the priority setting process, but the extent of that right is debatable. For governments which are seen to neglect some of their people there is also a debate to be had regarding to what extent donors have a duty to try and influence priorities.

The major role played by donors suggests that any discussion of priority setting needs to consider what donors' priorities are, how they are determined and what role they do and *should* play in priority setting at the country level. Consider for example the Global Fund. An analysis of Global Fund allocations found that the resource distributions are skewed towards low-income, high-prevalence countries (Avdeeva et al, 2011). The authors suggest that this provides evidence of successful targeting , but they do not address the question of whether or not the distributions were skewed enough – maybe the Global Fund should target low-income countries more heavily than it currently does. In fact, as the Global

Fund cuts funding to some middle income countries they are indicating that they believe funding (particularly if the total available pie shrinks) should be more heavily directed towards low-income countries. There are clearly political and other factors which have to be considered when discussing the appropriateness of Global Fund distributions. An awareness of these factors is central to any discussion of the involvement of donors in country priority setting.

Any discussion of priority setting must consider the motives and actions of responding governments. Responding governments allocate their own resources to interventions, and they decide how to alter such allocations when donor resources are received. Lu et al estimated that for every US$1 received in development assistance for health, countries reduced expenditure on health from domestic sources by an average of US$0.43 (2010). Although this finding has been challenged (Batniji and Bendavid, 2012) and results vary widely across countries, it still draws attention to the importance of national governments in the priority setting process, particularly the ministries of finance. Many would argue that government reductions in domestic allocations to health are the rational response to increased funding for health from external donors. If a government has allocated funds in a way it feels is optimal, it is unlikely that it would agree that additional funding should all go to health. Government may agree that some of it should go to health (say 57 cents in the dollar, i.e. US$1.00-US$0.43), but not all. By selecting to donate to healthcare donors are saying that all of these additional resources should be spent on health. When seeking to influence priorities, it is important to ask why there is a difference between what donors and recipient governments want to see spent on health as opposed to other sectors. It could be that one party knows better than the other what is best for the people of the recipient country. It may be that one party cares more for the people of the country than the other and so places greater emphasis on their needs as opposed to other factors affecting resource allocation. Differing values and levels of understanding will, almost always, lead to there being some differences between the priorities of donors and recipient countries. Concern should, however, arise when those differences are large. Efforts to understand why large differences occur, and how they might be bridged, are potentially important to facilitating a more transparent priority setting process. This is an issue not only for HIV/AIDS, but for aid in general. Initiatives to understand and reduce differences in donor and recipient priorities in relation to HIV/AIDS should consider the advances made in relation to development aid in general, such as the Paris Declaration.

Domestic governments are not homogenous entities. Ministries of health and welfare may well disagree with priorities reflected in the resource allocations they receive from ministries of finance. That is to say nothing of the motives of the executive branch (Dionne, 2009). In addition to government, there are many

other domestic actors who should, and sometimes do, influence policy. Any effort to become involved in the priority setting process in a country would do well to understand the terrain.

Given the number of actors involved, developing or strengthening processes to coordinate their involvement can appear daunting. In response it is tempting to try and remove the need for a process by reducing the priority setting to a technical exercise. HIV/AIDS priority setting is sometimes framed as simply a technical analysis to identify how resources should be allocated such that the number of infections averted or lives saved is maximized for a given budget. This, however, does not do away with the need for a process, it simply ignores the need. *There is no technical solution*. There will *always* be value judgments – are all ages to be valued equally? Do you weigh current lives more highly than future lives? etc. As long as there are value judgments, there is a need for a process so as to involve all those who have a legitimate right for their values to be considered. Moreover, technical solutions which fail to draw out the value judgments made are often dismissed by policy makers; policy makers may not always be able to pinpoint the reason they disagree, but, if the conclusions do not sit comfortably with them, they are likely to resist them. The inclusion of economic evaluations in a process which focuses on value judgments will draw out the differences, hopefully leading to debate rather than unease. In many cases both the technical information and the priority setting process already exist, the challenge then is to bring them together. This will involve breaching the gap between academic and political processes so as to identify and evaluate the real factors affecting HIV decision making.

The relative importance of value judgments and technical solutions differs depending on the stage of the priority setting process: The greater the difference in policies being prioritized, the greater the importance of value judgments. For example, there are significant differences between choosing between spending more on HIV/AIDS as opposed to road construction, and choosing between different approaches to PMTCT. For this reason, the balance of this paper discusses the priority setting by stage, i.e. allocations to relevant ministries from the ministry of finance; allocations from ministry budgets to HIV/AIDS programmes; and allocations to specific HIV/AIDS interventions from HIV/AIDS budgets. Given that the HIV literature has focused on the final stage, the paper will discuss the three stages in reverse order.

Allocating funds to specific HIV projects within budgets

There is clearly a need to improve the priority setting process for HIV/AIDS. It is critically important to allocate the resources that are available to the best possible effect. It is hard to ask for additional resources when those that are available are misspent. Moreover, if resource flows stagnate or decline it will become even more important to spend the money well, particularly if we are to see continued progress in slowing the spread of the epidemic, limiting the number of deaths and mitigating the suffering.

The question is: how do you define the best possible effect? The most popular approach has been to use cost effectiveness analysis (CEA). CEA can be useful and tools built around CEA can help inform decision makers. However, CEA is limited and caution must be exercised when interpreting the results.

Cost effectiveness analysis provides an estimate of the cost per unit of a targeted outcome (e.g. cost per HIV infection avoided). This allows interventions, which seek the same outcome, to be compared in terms of their relative efficiency at generating such outcome. On the cost side of the estimation, it is important to be clear on whether the costs are only those incurred by the provider or also those incurred by broader society. Moreover, it is necessary to be clear on whether the costs include only financial expenditure or all economic costs (i.e. the value of all resources used, even those not paid for, such as volunteers' time). At the two extremes, CEA based on economic costs from the perspective of society provide an estimate of efficiency from a societal perspective; CEA based on financial expenditure from the perspective of the provider give an estimate of the efficiency from a budget perspective.

The choice of outcome measure is the critical aspect of CEA. If policy makers are selecting from a group of interventions which have a single common outcome measure, then CEA is very useful, e.g. when selecting between PMTCT interventions. The strength of CEA in the PMTCT example comes from the ability to define the outcome in very narrow terms: the cost per infant infection averted at six weeks of age within a given population. If the outcome measure were simply HIV infections averted, more interventions could be compared, but the results would not lead as directly to a conclusion. The cost per HIV infection averted allows for the comparison of everything from PMTCT to male circumcision. The problem is that the target population is no longer the same and people may not attach the same value to an infection averted in different populations.

A number of outcome measures have been suggested to allow comparison across different interventions/populations (e.g. life years gained and Disability Adjusted Life Years (DALYs) averted). All of them require value judgments to be made, typically concerning the relative value of different states of health, and of health and life for different age groups. Policy makers should agree with CEA rankings to the extent that they agree with the values on which the outcome measures are based. However, in an apparent attempt to present priority setting as a positive rather than a normative exercise, the value base of outcome measures is often not mentioned. DALYs, in particular, are widely used with no reference to the many value judgments from which they are derived – value judgments which have been seriously questioned (Anand and Hanson, 1997).

Although intervention rankings derived from CEA alone should rarely be used to set priorities, CEA results should be considered in HIV/AIDS priority setting exercises. Other non-efficiency criteria must also be considered, but a failure to consider relative efficiency can lead to gross misallocations. Policy makers may value infections averted among the general population more than they do infections averted among drug-users. A consideration of CEA forces them to be explicit about just how much more they value the life of a member of the general population compared to the life of a drug user – possibly leading to a revision of priorities. It is in such ways that economic tools which seek to support an efficient allocation of HIV/AIDS resources can be very useful. They can be used to inform the priority setting process.

A number of costing tools have been developed to support the priority setting process for HIV/AIDS. A recent review by UNAIDS of HIV costing tools available to policy makers identified 26 tools (2011). Of these, 6 were designed to support priority setting: the Decision Makers Program Planning Tool (DMPPT); the Goals Model; Goals Express; the Marginal budgeting for Bottlenecks (MBB) tool; the OneHealth Model; and the Research Allocation for Control of HIV (REACH) Model. The UNAIDS review discusses the strengths and weaknesses of each of the models.

The upshot of the UNAIDS review is that models exist: they can be, and are in the process of being, improved. Such improvements should consider not only the accuracy of results, but continued or improved usability. A major concern raised in the review is that such models are not widely used or, when they are used, the results are largely ignored. The report suggests that this is because policy makers have been acting in the belief that the goal is universal access to all interventions and, as a result, had not been considering the need to prioritize. This highlights the need for a process into which results from the application of these tools can be fed. Current processes are clearly not sufficient and the results

of economic evaluations will have little effect if there is no systematic prioritization occurring in the first place.

Similar reviews and discussion papers echo the conclusions of the UNAIDS review. Hester et al, report that few countries mention CEA as a central issue in the strategic planning process, and even tracking of spending is limited (n.d.). Lasry et al argue that models are not used because they are too complex and the data requirements are too high (2009). The question of complexity is a contentious one. The UNAIDS review notes that one of the limitations of the Spectrum model is that it is seen as a black box because the calculations are hidden behind a slick frontend. The Spectrum model is, however, probably the most used HIV/AIDS planning tool, and in part this is likely to be because the complex calculations are hidden behind an easy to use frontend. Lasry et al go on to argue that use of available tools is limited as the focus has been on improving the technical aspects of the models, not on how to integrate models into the policy making process. Forsythe, Stover and Bollinger, provide some informative examples of instances when tools have been applied (2009). They mention their use in Lesotho, Kenya and Ukraine, among other places. They do, however, note that the analysis was typically done to secure additional funds from a donor, as opposed to reorganizing existing spending patterns.

The primary problem appears not to be the tools, *but their lack of use*. There are, however, a number of ways in which the existing tools can be improved so as to better inform priority setting. Possible improvements include: examining non-linear impacts; non-linear cost functions; synergies between interventions; and including more than a single outcome measure. It may be misleading to assume that a given increase in the scale of an intervention will lead to the same impact and cost the same to deliver. Non-linear outcomes and costs may change CEA rankings – this highlights a general weakness with CEA, i.e. that rankings may be unstable over time. Interventions may work better when implemented in combination, including this possibility may again change CEA rankings. Finally, policy makers may be interested in outcomes other than the effectiveness measure which is being used to rank interventions.

Even without new data, such improvements would be useful – they would allow for the implications of different assumptions regarding scale and scope to be examined. But if such improvements are to be fully utilized, more data is needed. Data on costs and outcomes at different scales of delivery are required (Galarraga et al, 2009). Studies examining the synergies between interventions would be particularly useful – fortunately a growing number of such studies are already underway. As a result of US Government and Gate's Foundation funding the London School of Hygiene and Tropical Medicine in partnership with others is examining a strategy combining household-based HIV testing

with universal community-based HIV treatment in Zambia and South Africa. The Harvard School of Public Health is evaluating the impact on HIV incidence of expanding coverage of an integrated set of HIV prevention interventions in Botswana. Johns Hopkins University is evaluating the impact of an integrated set of biomedical, behavioural and structural HIV prevention interventions in Tanzania. The results of these studies will be highly informative, but more is certainly needed, particularly when examining the importance of context in determining effectiveness. Country specific CEA results and examinations of how the same intervention plays out in different contexts would be helpful (Alistar and Brandeau, 2010). CEA studies of intervention for which there is currently a scarcity of data would allow the models to include a broader range of interventions, such as: HIV surveillance, school-based education, universal precautions, prevention for positives and more structural interventions (Galarraga et al, 2009).

Tools could be more nuanced in their presentation of results. It is often too simplistic to show that an intervention is more cost effective than another. Attention must be paid to uncertainty. It may only be more cost effective if implemented efficiently and targeted at a particular population group (Bautista-Arrendondo et al, 2009). Moreover, it may only be effective at all if certain social barriers are overcome (Bautista- Arrendondo et al, 2009). Highlighting which interventions may be hindered by social acceptability is important as it may be necessary for complementary interventions to address stigma and other barriers to be implemented simultaneously. Moreover, data quality varies and it is worth indicating the quality of data on which the cost effectiveness of different interventions is based. It is also worth noting when data are not available, indicating that there may be more cost effective options, but due to data constraints they could not be assessed. Not examining the cost effectiveness of an intervention because it is known not to be effective is very different from not examining an intervention which is thought to be effective but has not yet been adequately tested.

There are, therefore, a variety of ways in which the data, analysis and presentation of results can be improved. These improvements will lead to more powerful tools, which provide more relevant and accurate results to support the priority setting process. They will, however, be of limited use unless they are included in a priority setting process. The importance of the process and the non-technical aspects of priority setting are more pronounced the wider the range of interventions under consideration. As mentioned, examining alternative interventions for PMTCT is primarily a technical exercise, comparing different HIV prevention interventions is somewhat more complicated, comparing prevention to treatment more complicated still and comparing both to care and support is another matter altogether. The greater the variation in outcomes and

beneficiaries, the more important other factors, such as equity considerations, become. Moreover, while CEA is useful when there is a given budget, or a given target for a specified outcome, it is not so useful when budgets and targets have yet to be set. This is because setting them requires a comparison of the value of HIV/AIDS interventions in relation to other interventions, either within the same ministry or between ministries.

Allocating funds to HIV/AIDS programmes within ministries

Allocating resources to HIV/AIDS interventions from within a ministry of health (or other relevant ministries involved in a multi-sectoral response) involves the comparison of HIV/AIDS interventions with a host of other healthcare interventions (or education interventions if within the education ministry etc.). Within the health sector, outcome measures such as DALYs were developed to facilitate the use of CEA in precisely this type of situation. They have been developed to allow the relative efficiency of different health related interventions to be compared. As mentioned previously, the rankings which are derived from the application of CEA using such outcome measures should be accepted to the extent that the value judgments which underlie the measures are acceptable. For example, if you believe a year of life of a young child or older person is worth less than that of someone in their 20s, that future lives are worth less than current lives (quite a lot less) and you believe that a blind person who is also poor suffers the same as a blind person who is wealthy, then ranking interventions according to the cost per DALY averted should be acceptable to you.

There are many factors which should be considered in a comparison of health care interventions. A growing body of work is emerging which seeks to develop transparent and systematic approaches to priority setting which take into consideration multiple criteria (Baltussen and Niessen, 2006). One example is the Balance Sheet Method (c.f. Makundi et al, 2007). This method includes CEA results but notes that attention must be paid to political constraints, donor priorities, internal government differences, finance systems, and public acceptability. The method involves collecting information on disease prevalence, disease burden, current coverage of interventions, the severity of target health conditions, CEA results and equity considerations. This information is presented to policy makers and interest groups, who then discuss what should be prioritized. A number of methods have been developed to help quantify the weight which participants attach to different criteria (Peacock et al, 2009). Efforts have also been made to develop lists of what criteria should be

considered in order to avoid important aspects being overlooked (Baltussen et al, 2010). These approaches work well when the important aspects of the interventions can be quantified. In instances where important aspects cannot be quantified, there may be a need to combine quantitative and qualitative data (Goetgnebeur et al, 2010), but this may make ranking more difficult. One approach which helps address this problem is to produce priority groupings rather than rank ordering interventions (Baltussen et al, 2010).

The multi-criteria decision making approaches provide useful examples of attempts to address the complexity of priority setting. They do, however, suffer from a number of limitations. As mentioned, they do not deal well with non-quantifiable outcomes. More importantly, they may not reflect the values that should be used to determine priorities. These approaches help reveal participants' preferences, but there may be a disconnect between the values being applied and the values that arguably should be applied (Kapiriri and Martin, 2007). Like CEA, multi-criteria decision making approaches provide a useful input into the decision making process, but are, on their own, insufficient. Some would argue that including so many factors in a process over-complicates matters and that cost benefit analysis (CBA) does away with the need for this. CBA requires that all costs and benefits be valued in monetary terms. The total value of the costs is then subtracted from the value of the benefits to yield either a net benefit or a net cost. If there is a net benefit, the intervention should be undertaken. Theoretically this allows for interventions with different outcomes to be rank ordered in terms of their net benefit (or cost).

CBA have been conducted for HIV/AIDS interventions. For example, the RethinkHIV project conducted a number of CBA examining a range of interventions, from vaccine development to alternative approaches to treatment to health systems strengthening (http://www.rethinkhiv.com). The purpose of the project was to support the prioritization process. Once analysis on the CBA of different types of HIV interventions was completed by commissioned experts, a consultation process involving leading economists was undertaken to review the findings. The commissioned experts were requested to conduct CBA by attaching a US$ value to estimates of DALYs averted by different interventions. The approach was intended to allow for comparison across interventions of different types. Some of the commissioned experts, however, questioned the approach. This is because the problem with CBA is agreeing how to determine the appropriate monetary value of health benefits. This problem arises with all CBA related to health, as there is no non-controversial method of attaching monetary values to health and life (or illness and death). For example, when Brent conducted a CBA for VCT in Tanzania he used the value of statistical life and human capital approaches (2010). The former attaches a value to life based on analysis of pay differentials for high risk jobs. The latter estimates the value

of life based on potential productivity. A less direct route is to quantify (in monetary terms) a range of benefits without explicitly valuing lives. Resch et al, for example, estimate that the economic benefits of continued treatment of current patients who are part of the current cohort receiving treatment co-financed by the Global Fund will substantially offset or exceed the costs of continued treatment (2011). They considered the impact on labour productivity, averted orphan care costs, deferred medical treatment associated with opportunistic infections and end of life care. Arguably such an approach is flawed because costs to one party may be benefits to another, for example lost employment for one person may lead to gained employment for another. This problem can be addressed by examining the net impact on the economy. Macroeconomic simulations suggest that HIV treatment may lead to a net saving at the level of society (although not always) (Ventelou et al, 2012).

The problem with CBA is that many people are uncomfortable attaching a monetary value to good health, let alone to life. They argue that health and life are materially different from other types of benefits and cannot justifiably be reduced to a monetary value. Others would argue that when setting priorities in health there is no way around attaching a monetary value to health and life – you can do it explicitly in a CBA or implicitly in the allocation of funds. There are~~is~~, however, an important distinctions to be made here. Firstly, saying that a life is worth US$X is different from saying that having considered other obligations we can afford to spend US$X on saving that life. Moreover, even for those who see the first difference as semantics, there is a difference between the amount policy makers deem appropriate to spend after due deliberation, and the value of life as determined by some economic analysis: the former is an output of a process, while the latter is an input. Arguably the economic analysis could inform the deliberation, but by doing so you anchor the discussion to a figure, and anchors, even irrelevant ones, have a profound effect on final conclusions. To define the value of a life by assessing future productivity is hard to accept as an anchor, it is far too simplistic and reduces human life to a single element – disabled people, children, women (if you use salary information as a measure of productivity), and the elderly, among others, would all be discriminated against. Similar problems can be identified with all other measures which attempt to capture the value of health and life in monetary terms. While such measures may be problematic, identifying how much is typically spent on saving a life and using this information to help judge if a new intervention is worthwhile, could be useful and would promote consistency. Indeed, reflecting on past decisions is likely to be key to ensuring consistency in a priority setting process. The point is, placing a value on life and health is a value laden exercise and therefore necessitates a political process, not a technical calculation. CBA as typically implemented conceals the moral aspects of the allocation decision which is hard to justify.

This does not mean that analyses which examine the economic consequences of different interventions are not useful. They are only a problem when they present the economic returns as indicating the value of life and health. If the benefits are presented as saved lives and the consequent economic benefits, there would not be as many objections. The cost of inaction method proposes an approach which provides a framework for such a presentation (Anand et al, 2012). The approach compares costs to constitutive and consequential benefits. The constitutive benefits (or direct benefits) are the primary aim of the intervention. The consequential benefits (or indirect benefits) are additional benefits which accrue as a result of the intervention. The distinction allows for the inclusion of a range of benefits without creating the perception that the consequential benefits determine the value of the constitutive benefits. In the above case, improved health and lives saved would be the constitutive benefits of HIV/AIDS treatment. Macroeconomic benefits (and many other benefits) would be consequential benefits. Benefits can be measured in any number of different units, or could even be qualitative and simply described. The idea is to provide a full description of the implications of undertaking an intervention, to support the decision making process. Of course, such an approach does not allow for the mechanical ranking of alternative interventions. An intervention which saves more lives but generates fewer economic benefits cannot be automatically considered inferior. That requires a judgment call, which again requires a process.

Gruskin and Daniels provide a strong argument for a process not a formula or algorithm for generating priorities: 'An algorithm would do away with the process, and it is precisely the process that is the point' (2008, p1557). The authors propose the concept of accountability for reasonableness, which defines what is required of a process. The requirements are: 1) publicity – decisions and their rationale must be publicly accessible, 2) relevance – the rational for the decisions must provide a reasonable explanation for the priorities set, 3) revision and appeals condition – there must be opportunity to challenge and dispute priorities and contribute to the improvement of future decisions 4) regulation to ensure 1,2, and 3. Cost effectiveness analysis and multi criteria decision approaches, and indeed human rights arguments, theories of justice etc. can all feed into such a process, but none of them remove the need for a process. The question in the context of HIV/AIDS is the extent to which the existing priority setting processes meet these criteria, and the extent to which economic evaluations are successfully fed into them. Moreover, with increasing need for domestic resources to be allocated to HIV/AIDS interventions, it must be asked to what extent such process involve ministries of finance, and to what extent the information fed into them is relevant to representatives of these ministries.

Allocating funds to health and other relevant ministries

Allocations to health and other relevant ministries are a product of government policy. Understanding the policy formation process, therefore, is central to understanding how allocations might be influenced. Policy is a product of process and the process in each country is likely to be different, shaped by politics and power relations (Gilson and Raphaely, 2008). Different actors with different motives will be involved. Any attempt to promote the consideration of economic evaluations in such processes requires an understanding of the specific context. Moreover, it requires an understanding of existing efforts to strengthen policy making processes more generally. Considerable effort has been expended to promote effective planning across government sectors, to improve the interaction of donors and governments to avoid damaging fluctuations in funding and to coordinate responses. The HIV/AIDS community is not alone in its wish to see improved priority setting. The need to coordinate with other priority setting processes is particularly important when approaching ministries of finance as they will be intimately involved in these other processes already.

Allocations across ministries will not only require the comparison of HIV/AIDS interventions to other types of intervention, but also the comparison of different types of HIV/AIDS interventions. A multi-sectoral response requires interventions to be implemented by a range of ministries, which requires that resources be divided between these ministries. Some of the interventions will be aimed at the same outcome, if so CEA may be useful. For example, CEA can help when wanting to compare the relative efficiency of medical male circumcision and school-based prevention. Again the problems associated with comparisons across different populations arise. More difficulty, however, is likely to occur when comparing across interventions with very different outcomes. For example a CEA cannot help when allocating resources between prevention interventions and care and support for children who have lost their parents. A CBA would also be of limited use, it is again difficult to attach a monetary value to certain types of outcome, for example to a reduction in child depression – certainly such a reduction would improve educational outcomes, and thereby improve future productivity, but that is not really the sum of its value. Here again an approach which outlines the wide array of outcomes associated with different types of interventions could provide a more useful input into the policy making process.

The RethinkHIV debates which followed an analysis of the literature on alternative interventions provide an excellent example of the type of discussions of economic evaluations that need to be promoted. RethinkHIV commissioned a

series of background papers that looked at the cost effectiveness and cost benefit ratios of a range of HIV/AIDS interventions. These background papers were provided to a group of economists, including Nobel Prize winners, who were asked to set priorities for future investments. The panel did not simply take the cost effectiveness or cost benefit rankings supplied by the background research and accept that the rank order of interventions according to their cost-benefit ratios was ideal. Rather they considered these results along with other relevant factors such as institutional preconditions for success, ethical considerations, humanitarian urgency, the state of the healthcare system, uncertainty of outcomes and fear of doing harm. The question is how to promote similar debates, involving all relevant parties, in the countries most affected.

One way to promote such debates is to ensure that relevant information is available to inform such discussions. The executive branch of government, the ministry of finance, the legislators, and civil society may be interested in more than the cost per DALY averted. Involving these parties may require a more comprehensive approach to the evaluation of potential interventions. The broader economic and social impacts of improvements in health associated with reductions in HIV morbidity and mortality may need to be more fully explored and reported on. A first step would be to investigate what information those outside of implementing ministries would find useful in determining priorities. Then it would be important to identify the best ways of presenting this information and to examine different ways in which it can be fed into the priority setting process so that it receives the warranted consideration. This requires an understanding of how priorities are currently being set and of efforts to improve these processes.

Strengthening national capacity to not only engage in, but to manage, processes which facilitate such debates may be a way in which HIV/AIDS resources can be used to generate broader systems strengthening. National capacity has been shown to be critical for successful priority setting exercises in the developing word (c.f. González-Pier et al, 2006). A potentially fruitful area of future research would be to examine approaches to developing national capacity to conduct legitimate prioritization processes and strengthen priority setting institutions. National capacity might, for example, be greatly improved by strengthening the capacity of implementing ministries to conduct and review comprehensive economic evaluations of alternative interventions. Implementing ministries may be required to make their case for additional funds to ministries of finance, improving their capacity to do so may be invaluable. Strengthening the capacity of ministries to do this for HIV/AIDS interventions will have spill-over effects for other areas – thereby strengthening the system more generally.

Summary and key research areas

Economic evaluations have the potential to inform the restructuring of responses to HIV/AIDS so that greater impact can be achieved for the same or possibly fewer resources. At a time of hardening resource constraints, such restructuring is essential. Failure to re-orient spending will lead to stagnation in the response, limiting future gains and possibly even the reversal of gains already won.

There are a number of ways in which the existing tools which aim to support priority setting in HIV/AIDS can be improved upon. Possible improvements include:

- Greater attention to interactions between different interventions. This will allow policy makers to prioritize sets of actions, possibly leading to a more efficient response.
- Consideration of economies of scale and scope (or diseconomies). Interventions may become cheaper or more expensive the larger the scale or when they are combined with other interventions. Changing cost structures may significantly change cost effectiveness ratios.
- Include multiple outcomes. Although this diminishes the ability to mechanically generate rankings, it provides a more comprehensive picture to policy makers of the implications of their priority setting. Particular attention should be paid to including outcomes which are relevant to policy makers and constituencies outside of implementing ministries.

More and better data are required to amplify the effect of resource allocation tools and any improvements to them. Urgent data requirements include:

- Data on the effectiveness of different combinations of prevention interventions. Studies are underway in Zambia, Tanzania and South Africa.
- Data on the costs and/or effectiveness of interventions which currently are not dealt with comprehensively in the literature, such as school-based education and structural prevention interventions.
- Data on economies of scale and scope. Estimating cost functions requires data from large scale interventions, not small trials.
- Data on a broader range of outcomes of HIV/AIDS interventions. Implications for household finances, the healthcare system, the national economy, and children in affected families are among the many impacts which have been investigated previously. There has, however, been less research on how these and other impacts are reduced as a result of interventions (particularly interventions not directly focused on a specific impact e.g. the implications of adult treatment for child outcomes). If

tools are to provide information on a broader set of intervention outcomes, these data are needed.

Improving the tools and the data that inform them is a critical step in promoting greater consideration of economic evaluations in the priority setting process. Such efforts will, however, likely have limited effect if the resultant analysis is not introduced in the appropriate way into an appropriate priority setting process. A process is required, both to increase policy makers engagement with the economic data, but also to allow for the consideration of other relevant factors which should and do influence HIV/AIDS policy. Concerns with equity, competing priorities in health and other sectors, human rights, political and social constraints, and many other factors must be taken into account when setting HIV/AIDS budgets and identifying priority interventions. Existing strategic planning processes appear, in general, to concentrate on grand plans which avoid hard debates by including everything for everyone. Priority setting is then left to chance or to the ad hoc application of a range of relevant and irrelevant criteria as those with influence choose to implement, adapt or ignore interventions included in the plan.

A concerted effort to develop an understanding of how to strengthen the priority setting process is required. Research examining how priorities are currently set and what information and interventions could be undertaken to improve upon the status quo could prove to be invaluable. When examining how priorities are set it is imperative to try and understand why the results of economic evaluations are rarely considered. If it is, as the UNADIS review suggests, because there has been a perception that universal access to all interventions is the goal, then the remedy will be quite different from what it would need to be if it is because the results were not understood or trusted. Understanding the process is critical not only because it is important to strengthen the process to increase its legitimacy, but because economic evaluations will likely continue to be ignored unless they are integrated into the process in an appropriate manner.

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