



# INCORPORATING A STRUCTURAL APPROACH WITHIN COMBINATION HIV PREVENTION

## AN ORGANISING FRAMEWORK

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## INTRODUCTION

**H**IV incidence remains unacceptably high in sub-Saharan Africa, with 2.5 new infections for every individual placed on treatment [1]. Combination HIV prevention therefore remains a priority. Behavioural interventions remain the cornerstone, and changes in sexual behaviour have contributed to declines in HIV incidence in some settings [2, 3]. Male circumcision reduces HIV transmission by roughly 60 percent [4, 5], and voluntary medical male circumcision (VMMC) is being scaled up in 14 sub-Saharan African countries [6]. The global community has pledged to eliminate mother-to-child transmission [7]. Antiretroviral treatment can reduce risk of HIV acquisition and infectivity, and thus transmission between serodiscordant sexual partners [8, 9]. Research in sub-Saharan Africa will evaluate the population-level impact on HIV incidence of strategies to expand HIV testing and offer treatment to all who test HIV-positive and, perhaps, as pre-exposure prophylaxis to uninfected individuals.

HIV prevention programmers seek to effectively utilize resources to reduce HIV incidence and disparities in risk. Among this group there is widespread recognition that characteristics of the social, economic, legal, and cultural environment shape HIV epidemiology [10–15]. These “structural factors” are beyond the control of individuals but can affect infection rates for whole populations by influencing the environment in which

people live [16]. These same factors create and re-enforce social stratification within populations: for example, they generate economic or gender inequalities. Groups generated by these stratification processes (for example, the poor and the wealthy) are exposed to different social determinants of HIV risk [17]. Parkhurst uses the term “structural drivers” to refer to determinants for which there is empirical evidence of an influence on HIV risk. These patterns of exposure may in turn be reflected in the social distribution of infections within a population (the social epidemiology of HIV). “Structural factors” have therefore influenced the pattern and scale of HIV epidemics and have constrained the delivery and effectiveness of HIV prevention, care, and treatment programmes (see Figure 1). Yet HIV prevention programmers still rarely include a “structural approach” when allocating resources.

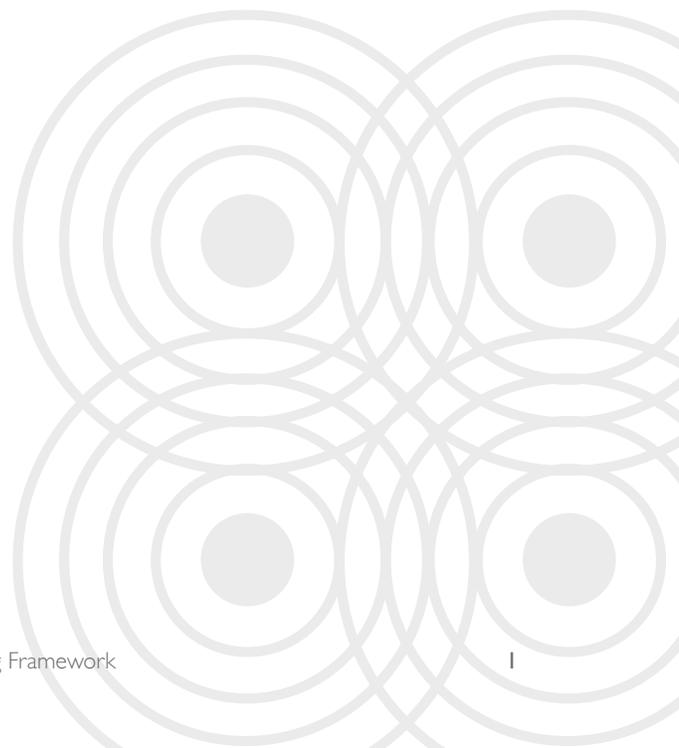
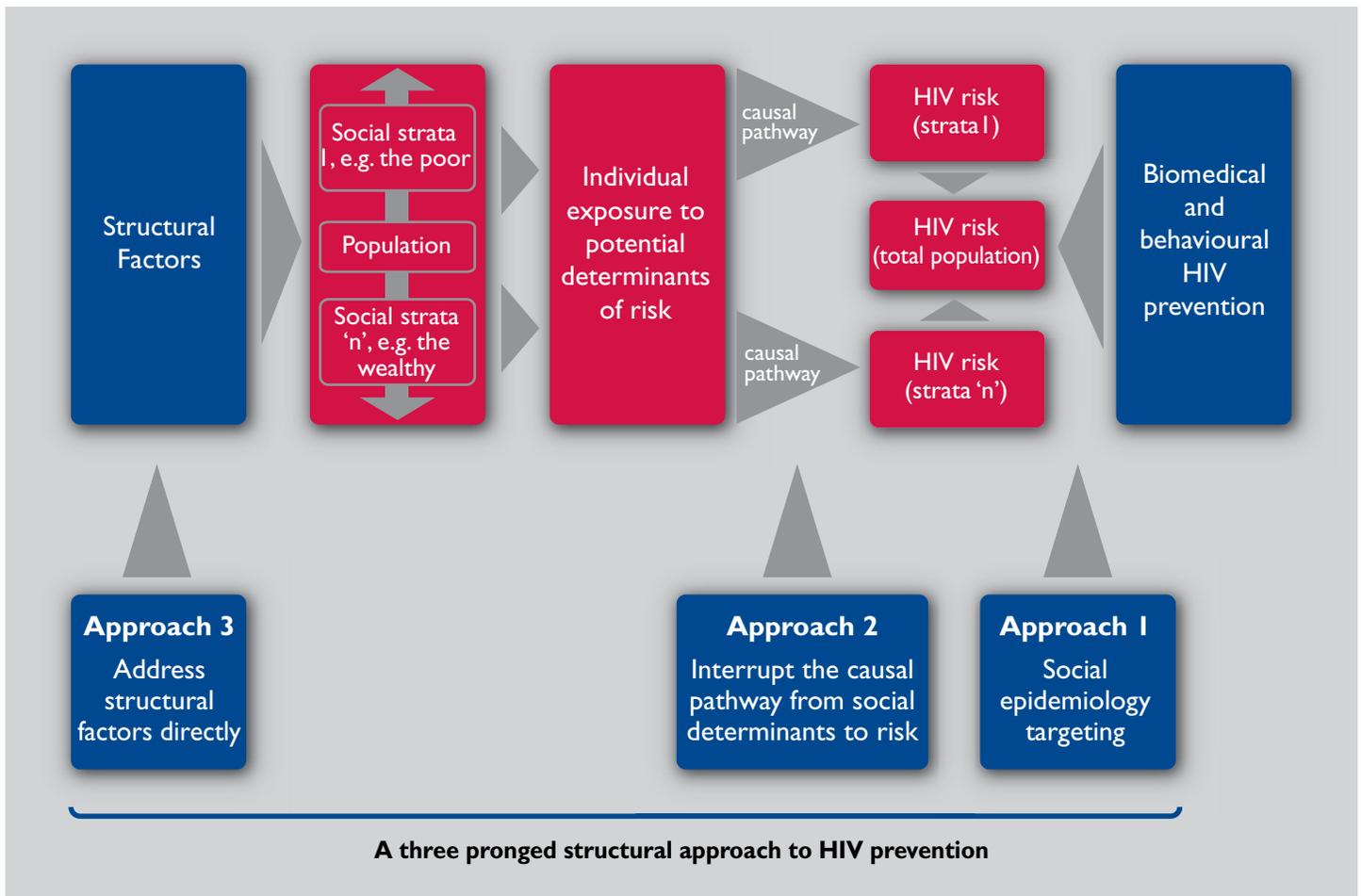




Figure 1. Schematic representing the potential influence of structural factors and biomedical and behavioural HIV prevention on population structure and HIV risk profiles, and a three-pronged structural approach to engaging these dynamics



The figure shows how structural factors lead to social stratification in populations. Individuals within these strata are exposed to different living conditions, including social determinants of HIV risk. Structural factors therefore influence risk for the whole population, and how this is distributed among social strata.

In 2008, Gupta et al. outlined three barriers to the implementation of structural interventions for HIV prevention: the absence of clear definitions, lack of operational guidance, and limited data on the effectiveness of such approaches [13]. This paper addresses the second of these barriers. Others have called for greater social science understanding as part of a 'know your epidemic' approach [13, 15, 18], and an excellent recent synthesis [15] argues that by fostering individual agency, creating an enabling environment and increasing "community AIDS competency", structural interventions can enhance individual and community-level resilience to HIV. This paper approaches the problem from a particular perspective and recommends a three-pronged "structural approach" to HIV prevention programming (Box 1).

Before proceeding, it is worth highlighting what this paper will and will not seek to do in other key areas identified by Gupta [13]. First, Parkhurst, in this series, discusses definitions in the area of structural interventions, and where necessary, this paper illustrates how the arguments made are in-line with definitions provided there but does not discuss definitions further. Second, the paper does not systematically review evidence on structural interventions for HIV prevention, as others have already attempted to do this [20]. Regrettably, the evidence base remains weak. There is a desperate need to strengthen the evidence base with more 'realist' trials that both provide internally valid evidence of the impact of defined strategies on HIV incidence and situate findings within a broader social and economic context [21]. Yet despite the weak evidence base, HIV prevention programmers are motivated to operationalise (and evaluate) a structural approach as part of combination HIV prevention, and it is this need to which this paper responds. Finally, the paper does not offer a menu of specific interventions that may be appropriate in some contexts but not others, as Pronyk, in this series [22], fulfils this aim. Rather, the gap this paper

### Box 1. Paper Summary

**The Problem:** "Structural factors" are characteristics of the social, economic, legal, and cultural environment that act as determinants of HIV risk for whole populations and of how this risk is distributed within populations. To date, "structural approaches" that engage these factors remain poorly developed.

**The Target Audience Perspective:** "HIV prevention programmers" control the deployment of limited resources over set timeframes with the primary goal of reducing HIV infection rates and disparities. They do not themselves set broad social policy or research agendas, but both respond and seek to influence these. This group is often motivated to adopt a "structural approach" within combination HIV prevention.

**The Proposed Recommendation:** This paper proposes a three-pronged structural approach to be used by HIV prevention programmers. It aligns with Parkhurst's definition of a structural approach, as it can be tailored to populations, considers factors beyond provision of information alone, and recognises that multiple factors shape risk patterns. The approach overlaps with the investment framework set out by the Joint United Nations Programme on HIV/AIDS (UNAIDS) in 2011, which proposes three categories of investment required for a comprehensive response, namely: basic programmatic activities, addressing critical enablers, and achieving development synergies (19). This paper describes how a structural approach can inform action under all three categories.



seeks to fill is to provide more concrete guidance for HIV prevention programmers on how to organise a “structural approach” to HIV prevention while recognising that the most appropriate specific interventions to be adopted may vary between settings.

## APPROACH I

### SOCIAL EPIDEMIOLOGY TARGETING: ENHANCE THE EFFECTIVENESS AND EQUITY OF BIOMEDICAL, BEHAVIOURAL, AND TREATMENT-BASED HIV PREVENTION

**H**IV prevention has been systematically under-resourced, poorly targeted, and delivered inefficiently in ill-conceived combinations of interventions [18]. Better practice can improve this situation, and the UNAIDS investment framework is a useful step in this direction. Insights from social epidemiology should be included in the process to ensure that socially defined population groups at high risk of infection and with poor access to health interventions do not disproportionately suffer from the burden of infection.

One key insight from social epidemiology is that, unless action is taken to ensure that public health interventions rapidly and effectively reach marginalised, poor, and stigmatised communities, they will do so slowly and at low quality. This has a knock-on effect of increasing health inequalities and compromising the population impact of interventions. Tudor-Hart’s “inverse care law” states that quality of health services is found to be almost universally inversely related with need [23], and this holds for health services in low- and middle-income countries [24, 25]. Further, the roll-out of effective new health interventions tends to increase health disparities by increasing the

health of wealthier groups faster than that of poor groups [26]. Generally, a greater proportion of health spending reaches those from better educated and higher socioeconomic groups [25].

Is there evidence of this pattern in relation to HIV? Epidemiological trends in a growing number of sub-Saharan African countries suggest that although HIV prevalence was initially highest among higher socioeconomic groups, it is now falling fastest among these same groups, probably due to changes in sexual behaviour. Similar reductions have not occurred among individuals in lower socioeconomic groups, probably because behavior change among these groups has been inhibited by structural factors [27–31]. While this phenomenon should be monitored at regional and country levels, it seems increasingly plausible that over time the relative burden of infection will continue to grow among the most disadvantaged. There are parallels with what happened in the United States, where rates of new HIV infection declined most rapidly among white, educated gay men who had the means and social connections necessary to forge and respond to new strategies for encouraging safer sex [32]. A recent review suggests that increases in health disparities may particularly be a problem with certain types of public health intervention such as media campaigns, which have formed the backbone of the HIV response in many countries [33]. While there are currently few data on access to antiretroviral treatment disaggregated by socioeconomic status, treatment may also be more rapidly accessed by those who are better off, compared to poorer, more marginalised groups.

As noted, the allocation of resources to HIV/AIDS has generally been inefficient and undermined by a lack of data and information; this situation must improve [18]. There is a strong argument that funds should now disproportionately target those for whom behaviour change is most constrained by social context or who have the worst de facto access to health services, such as low-income women in the general population and key populations such as female sex workers, men who have sex with men, and people who inject drugs. Consider the case of female sex workers: In sub-Saharan Africa, this group have a high burden of infection and are involved in a high proportion of transmission events [34]. Yet interventions for this group are systematically under-resourced despite well-established evidence that reaching these groups requires outreach, targeting, support to navigate available services, and combination approaches that address structural factors [35]. For example, in Kenya, the 2009 modes of transmission analysis suggested that female sex workers and their clients were involved in some 14.1 percent of incident infections, yet between 2006 and 2008, < 1 percent of the national HIV/AIDS budget apparently reached this group [36, 37]. The complex range of practices that might be seen as sex work in African settings has likely made this situation worse.

Targeting HIV/AIDS interventions informed by social epidemiology constitutes a component of a structural approach to HIV prevention. Similar options have been proposed to reduce disparities in child health [38]. If such targeting is not prioritised, monitored, and evaluated, it will be neglected. Much greater attention must be paid to the social epidemiology of HIV as part of efforts to “know your epidemic, know your response”. This will include understanding the pattern of the next 1,000 infections from a social stratification standpoint (urban/rural, high

or low socioeconomic status, etc.), and identifying which social groups are reached by services and which are likely to require targeted support to benefit from the roll-out of new technologies such as VMMC. Such assessments are feasible: incorporating socioeconomic strata within dominant modelling tools used to predict epidemiological trends is an essential and urgent need. Programmers should ensure that lower socioeconomic and marginalised groups are prioritised for the disbursement of funds and the introduction of new prevention strategies. They should ensure that outreach activities are in place that reach remote or socioeconomically marginalised groups and/or that existing central services meet the needs of these groups (e.g. in terms of their location, opening hours, and the attitudes of staff to potential clients from stigmatised groups). Finally, they may consider investing in targeted booster interventions such as incentives or interventions that increase the uptake of existing interventions, such as regular HIV testing and counselling.

Such actions do have costs and pose potential risks. Targeting services costs money and can be inefficient in comparison to non-targeted approaches. Singling out specific groups for more intensive intervention runs the risk of further stigmatising these groups, while there is evidence that in some cases services for poor people can become poor services. These risks and concerns will need to be managed and evaluated. But experience suggests that without considering these issues during the planning processes and identifying specific actions to ensure that hard-to-reach and poor groups are reached, disparities will increase.



## Box 2.

### Examples of HIV-Specific Critical Enabler Interventions

**Creating safe spaces** that allow young men and women and high-risk marginalised groups such as female sex workers to collectively negotiate safer norms around sexual behaviour in the context of HIV/AIDS, to discuss and enact collective solutions to their health problems, and to consider these in the context of the societal conditions that bring about their vulnerability can create the conditions necessary for low-risk behavioural strategies to emerge (15, 39). The Sonagachi project among sex workers in India fostered an enabling environment in which transformative education could be successful, promoting local ownership of the programme, and bringing those with power into the process from the start (40). The large-scale Indian Avahan programme improved service delivery for a range of most-at-risk groups. However, building on the Sonagachi experience, it also included community mobilisation with sex workers (41, 42).

**Participatory education programmes** have been developed by the HIV and development sectors, but few are currently delivered at scale. Many draw on Freire's notions of transformative education and critical consciousness (43). "Stepping Stones" is perhaps the most widely used (44). A shortened 50-hour version of the programme targeted at young men and women in South Africa was the focus of a cluster-randomised trial (45). The programme aims to improve sexual health by building stronger, more gender-equitable relationships. The trial found evidence for reduced risk of herpes simplex virus–type 2 (HSV-2) among young men, though not young women, who participated; however, it found no evidence for an effect on HIV.

The training component of the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) delivered to **microfinance** clients (46) also sought to expand critical consciousness among its participants. The combined microfinance and training intervention was successful in reducing levels of reported intimate partner violence among participants, although it did not have the hypothesised effect on HIV incidence among those only indirectly exposed (47).

Sexual behaviour–specific **financial incentives** recognise that adopting sexual practices that may be low risk for HIV (such as abstinence, staying faithful to a single sexual partner, and using condoms) may have potential social and financial costs to individuals over the longer term. Financial incentives in part seek to bring the benefits of safe sex closer in time to the behaviour in question. In a recent trial in Tanzania, participants were randomised to receive a regular financial incentive (U.S.\$10 or U.S.\$20) conditional on testing negative for curable sexually transmitted infections (STIs). There was some evidence that those randomised to the larger (though not the smaller) payment had slightly lower prevalence of a combined STI endpoint after 12 months (48). As the authors point out, more study of the effectiveness, cost, and potentially negative impacts in different contexts is required before strong commitments are made to the roll-out of such approaches.

## APPROACH 2

### INTERRUPT THE CAUSAL PATHWAY FROM SOCIAL DETERMINANTS TO RISK: DELIVER CRITICAL ENABLER INTERVENTIONS TARGETING THE SPECIFIC, DISTAL DETERMINANTS OF HIV

Even if they are well-targeted, biomedical, behavioural, and treatment interventions alone may be insufficient for the long-term control of HIV because of structural factors in the social, economic, legal, and cultural environment that act as barriers to their effectiveness [14]. This section highlights interventions that seek to interrupt the causal pathway between individuals' exposure to these structural factors and their risk of HIV infection. Key characteristics of associations between structural factors and health outcomes are their context specificity and amenability to change. For example, environments where young women are not encouraged to discuss sensitive issues, such as approaches to avoiding HIV infection from their sexual partners, may put both young women and men at greater risk of infection. But the strength of this linkage may be altered. For example, it may be possible to deliver interventions that seek to reduce this association by increasing individuals' resilience to such environments, without changing the broader structural forces themselves. Such interventions are sometimes known as critical enablers and should be delivered alongside, or incorporated within, standard biomedical and behavior change interventions. Box 2 highlights examples of interventions for which the primary purpose of their delivery would be to prevent HIV infection, and that as such, will need to be planned and funded by the health sector. The UNAIDS strategic investment framework recommends that critical enabler approaches are resourced with 5.9–3.7 billion USD per year over 2011–2020, representing 19–36 percent of the spending over this period [19]. Box 2 provides a non-exhaustive list of potential examples, many of which are also discussed in other papers in this series [22].

Some of the interventions described in Box 2 have been evaluated using randomised trials, with sometimes disappointing results in relation to the hypothesised effects. However, in each case only one such trial has been undertaken to date, and the total number of rigorous impact evaluations that have been undertaken of these strategies is woefully inadequate. This lack of evidence, a key factor described by Gupta in 2008, continues to act as a major barrier to the adoption of these approaches. This alone does not explain, however, why HIV prevention programmers motivated to address structural factors have not operationalised these approaches on a wider scale and evaluated them at the same time. Linked efforts to implement programmes and conduct rigorous, prospective evaluation of these efforts would be of particular value in the coming years.

Manuals to guide the implementation of such approaches are often available, as in the cases of the IMAGE and Stepping Stones interventions. Despite this, HIV-specific critical enabler interventions are perceived by programmers as complex and difficult to systematise and deliver at scale. Both Stepping Stones and IMAGE offer lessons in this regard. In the case of IMAGE, the first step was to identify a strong partner organisation from the microfinance sector. Then the training component of the intervention was delivered to microfinance clients by a research group during a randomised trial. Over a three-year expansion of delivery following the trial, it was hoped that the Microfinance institution (MFI) in South Africa would take on the management of the combined programme. This was not possible despite strong support for its delivery [49, 50]. Essentially, administering and assuring the quality of the training component was simply too much to take on for the specialist MFI, whose skills and strategic priorities lay in the delivery of microfinance loans to low-income women. The conflicting priorities expressed by microfinance

### Box 3.

#### A Cross-Sectoral Approach to HIV Prevention

It is increasingly clear that longer school attendance and higher levels of educational attainment, particularly for young women, are important predictors of lower risk of HIV. Consequently, it has been hypothesised that initiatives to improve school attendance, such as providing cash transfers to adolescent women and their families conditional on school attendance, might reduce HIV risk. Such interventions also have the potential to promote educational and social development outcomes and are the subject of policy debates in those sectors.

A recent trial by Baird et al. in Malawi compared young women randomised to receive regular unconditional cash transfers, cash transfers conditional on school attendance, and no cash transfer. The study measured HIV prevalence at endline rather than incidence over the follow-up period, the primary analysis included both unconditional and conditional transfers, and the unadjusted and adjusted results were quite different from each other. Consequently, the evidence of lower HIV and HSV-2 prevalence among the intervention groups was somewhat difficult to interpret (52). However, two large trials in this area are ongoing in South Africa (53), and there will soon be strong evidence to guide policy prescriptions from an HIV prevention perspective. Decisions about the wide-scale adoption of such approaches will be influenced not only by the views of HIV experts but also by other sectors.



managers are important to note since similar barriers may exist if, as is hoped, critical enabler interventions can be delivered at high quality in workplaces, community groups, and other settings. Stepping Stones, meanwhile, has grown in its reach through a network of users who have developed and modified the curriculum for use in over 40 countries and produced over 20,000 copies of the manual

[51]. This strong grass-roots development of the initiative continues, but investment in scale-up is a barrier to wider roll-out.

The lesson for HIV programmers here is that guidance on specific programmes does exist, but while there may be some synergies and opportunities to “piggy back” with the activities of the private sector or other development organisations, these initiatives will require specific resources to be effective. Their roll-out will require significant budget lines and will need to be planned by innovative programmers who can scale up their delivery without losing the programmes’ essence. Programmers will need to identify networks of appropriate settings (such as schools, health settings, workplaces, football clubs, community groups, churches, microfinance organisations) to deliver such interventions in tandem with other behavioural interventions, and to provide detailed technical and financial support for their wide-scale delivery. These efforts must be conducted alongside significant efforts at continuing to expand the evidence base.

## APPROACH 3

### ADDRESS STRUCTURAL FACTORS DIRECTLY: PROMOTE HIV-SENSITIVE, CROSS-SECTORAL DEVELOPMENT

Many of those championing structural interventions for HIV prevention recognise that policy actions in other sectors are essential. A variety of specific examples are given by Pronyk in this series [22]. To illustrate the challenges of making progress in this area from the perspective of HIV-prevention programmers, consider the case of cash transfers that are conditional on school attendance (Box 3).

From the perspective of the HIV prevention programmer, the defining characteristic of these approaches is that the key policy levers are beyond the direct influ-

ence of those whose principal aim is HIV control, and as such their implementation has both costs and benefits in other sectors. The emphasis for HIV prevention programmers should be to support the development of a strong evidence base in relation to HIV, build partnerships across sectors, and understand opportunities and constraints for policy change in these realms—not to do it all. The term “structural interventions” has in the past become synonymous with broad-based, long-term development goals, prompting those principally concerned with HIV to be both frustrated at the size of the challenge and unclear about the rationale for using HIV resources to achieve these aims. This way of framing structural interventions must change.

The challenge, then, is to identify what HIV prevention programmers can do to foster incremental progress in relevant areas. This will not be simple. While maximising development synergies is recognised as a key part of the response by UNAIDS [19], and HIV has long been seen as a cross-sectoral issue, coordinated policy making remains hard to achieve. For example, in Tanzania, policy fragmentation has been identified as a key barrier to implementing structural approaches to HIV prevention [54]. The exceptional level of resources targeted at HIV/AIDS may also have inadvertently undermined cross-sectoral policy development, since short-term measurable gains directly relevant to HIV have been those most sought by donors.

Yet, even though coordinated policy making may be complex, there may be great support for development initiatives with recognised benefits across sectoral boundaries [55, 56]. In contrast to the HIV-specific financial incentives discussed in the previous section, interventions such as education-conditional cash transfers for young women are more broadly embedded in development policy. As an example, South Africa’s government is strongly committed to the International Labour Organisation’s Social Protection Floor Initiative and has a number of well-established

cash transfer programmes targeting poor households, particularly those housing the elderly, the young, and those with disabilities. There are already plans to extend the child support grant to households with adolescent young women, and to make this conditional upon school attendance. Ongoing research trials will provide insights into the relative importance of school attendance versus cash incentives as a means to reduce HIV incidence. These findings will provide important information to policy makers on the relative import of conditionality to HIV impact. The link to broader development objectives is central to this approach and might be mirrored in other areas such as agricultural development and legal frameworks/human rights issues.

So, although unable to enact these policy prescriptions unilaterally, HIV programmers must take specific actions to encourage other sectors to adopt policies that may influence HIV transmission. The United Nations Development Programme (UNDP), for example, maps out a framework for maximising synergies across efforts to achieve HIV-related and various other Millennium Development Goals (MDGs) [56]. The framework emphasises research to understand structural factors, maintenance of a policy environment that supports cross-sectoral policy development, partnership building, and the development of best practice. Key actions for HIV programmers to lead include strengthening the evidence base in partnership with research institutions and ensuring that knowledge arising from such research is translated across sectoral boundaries. Meaningful engagement of players from other policy sectors within national AIDS commissions is imperative, as is tracking how cross-sectoral policy planning takes place. HIV prevention programmers must do more to understand the policy environment in other sectors in relation to both political and process barriers to implementation. Where progress is achieved, identifying key levers of change is imperative.

## CONCLUSION

This paper seeks to foster a “can-do” spirit among HIV prevention programmers charged with incorporating a structural approach within combination HIV prevention strategies. It offers suggestions for action by HIV prevention programmers on three fronts (see Figure 1). These range from the relatively simple (such as deliberately disproportionately targeting investments to ensure that biomedical and behavioural interventions reach those from the lowest socioeconomic strata) to the ambitious (such as establishing systems for the rapid scale-up of delivery of critical enabler interventions to break the pathway between social determinants and risk) and the complex (such as addressing structural factors directly by influencing development policy and resource allocation in non-health sectors). All are promising strategies and

are consistent with the vision of the UNAIDS strategic investment framework. A remaining concern, however, is that if the investment framework approach is successful in motivating international donors to invest, structural approaches will continue to be neglected as they have been in the past. This paper suggests that identifying specific actions under each of three types of approach and ensuring that these actions are documented, prioritised, funded, delivered, monitored, and evaluated is essential. In contrast to much literature in this area, this paper deliberately seeks to downplay the complexity of doing so. Work could start today.

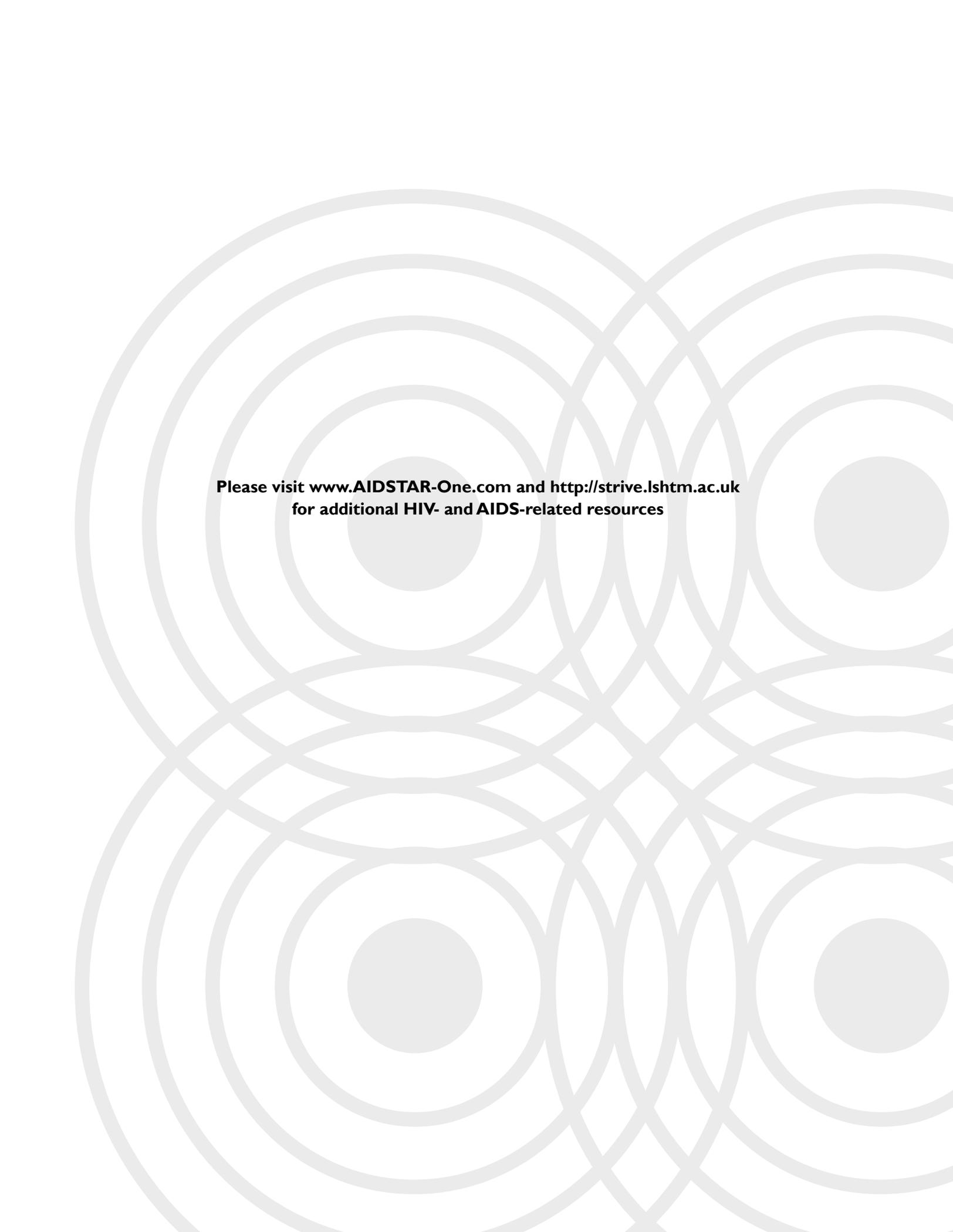


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The background of the page features a repeating pattern of overlapping circles. Each circle is defined by a thick, light gray outline. The circles are arranged in a grid-like fashion, with each circle overlapping its four immediate neighbors. In the center of each of these four overlapping circles, there is a smaller, solid gray circle. This creates a series of four larger, faint, overlapping circles that form a grid across the page. The text is centered within one of these larger circles.

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