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Combination HIV Prevention: Tailoring and Coordinating Biomedical, Behavioural and Structural Strategies to Reduce New HIV Infections

A UNAIDS Discussion Paper

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JOINT UNITED NATIONS PROGRAMME ON HIV/AIDS
UNHCR UNICEF WFP UNDP UNFPA
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Executive Summary

HIV prevention programmes are working. UNAIDS 2010 Report on the global AIDS epidemic confirms that the decline in new HIV infections over the past 10 years is clearly linked with changes in behaviour and social norms together with increased knowledge of HIV. Yet with two new HIV infections occurring for every individual started on antiretroviral treatment, strengthening HIV prevention remains an urgent global health priority. Although a wide array of proven prevention tools exist, existing prevention efforts suffer from numerous common weaknesses. Prevention efforts to date have overwhelmingly focused on reducing individual risk, with fewer efforts made to address structural factors —socio-cultural, economic, political, legal and other contextual factors— that increase vulnerability to HIV (see Figure 1). National prevention programmes are too often made up of a collection of disconnected interventions, and these often lack clear milestones, clearly articulated causal pathways and clear connections with other programmes that contribute to achieving the same prevention targets. Weak investments in joined-up planning, monitoring and evaluation systems reduce decision-makers' confidence in existing prevention tools and prevent programme planners and implementers from improving prevention efforts over time.

The approach known as "combination prevention"(Box1) offers the best prospects for addressing documented weaknesses in HIV prevention programming and for generating significant, sustained reductions in HIV incidence in diverse settings. Combination prevention relies on the evidence-informed, strategic, simultaneous use of complementary behavioural, biomedical and structural prevention strategies. Combination prevention programmes operate on different levels (e.g., individual, relationship, community, societal) to address the specific, but diverse needs of the populations at risk of HIV infection (see Figure 1). In virtually every country where marked progress in preventing new infections has been documented, a combination of structural, behavioural and biomedical prevention approach has been used.


Photo: UNAIDS

Although combination prevention is not a new idea, it is striking how seldom it has been systematically implemented. In part, this reflects ongoing questions among national AIDS authorities and AIDS programme managers about how best to prioritize and organize evidence-informed prevention programmes. This paper summarizes the case for combination prevention, and offers guidance on planning, implementing and monitoring combination prevention programmes. The paper is primarily intended for use by national programme managers, but may also be useful for district-level planners and for other stakeholders in the field.

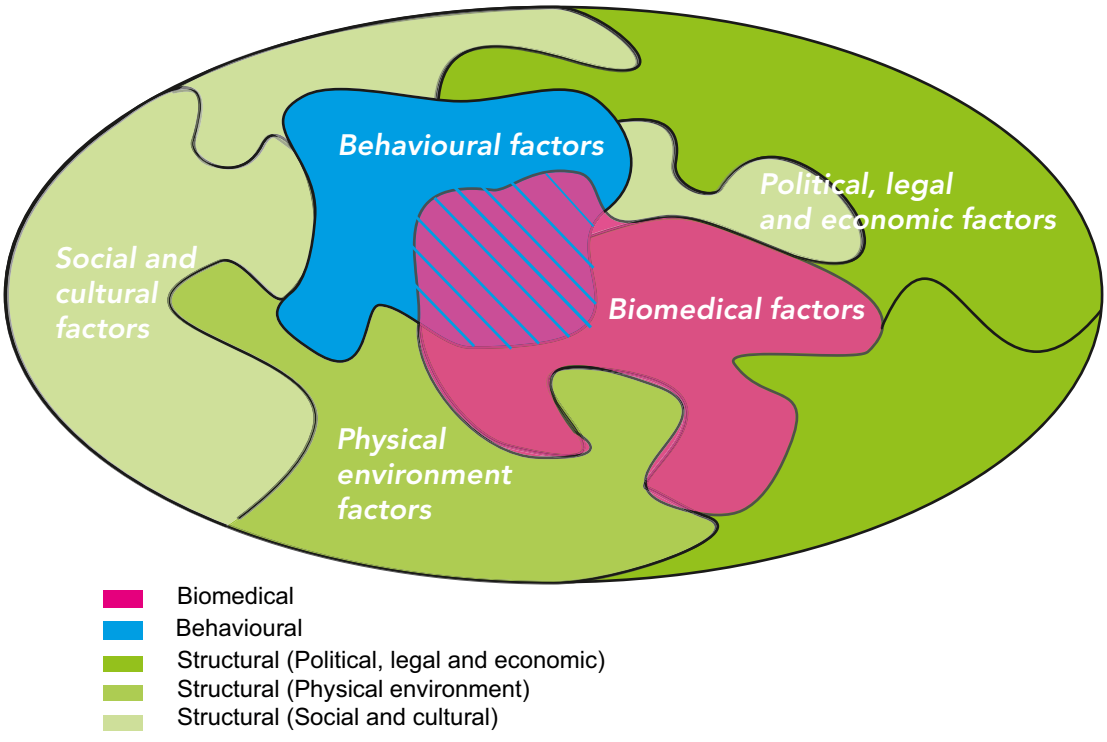
Planning combination prevention programmes. Combination prevention programmes ideally are the result of an open, inclusive, transparent programming cycle (see Figure 2) that engages affected communities, government ministries, and other stakeholders and sectors in analyzing their local risk factors and underlying causes of vulnerability (see Box 2) and in building a common sense of purpose and mutual accountability for preventing new HIV infections. Taking advantage of available tools to assemble biomedical and behavioural data to estimate incident HIV infections by modes of transmissions, these national planning processes should identify and characterize the key populations and the relative importance of various behaviours and settings that are associated with increased risk of HIV infection. National AIDS authorities should use available data sources, including the perspectives of affected communities, to characterize the geographic distribution of new and prevalent HIV infections in order to inform the development of geographic priorities. The planning process should also include a review of the social, cultural, economic and political context, including relevant legal and policy frameworks. Efforts should be undertaken – in concert with affected communities and technical agencies – to understand both the immediate and underlying causes of risk, and to identify the primary structural causes of national and sub-national epidemics. This should include a participatory gender analysis to identify harmful social gender norms and gaps in the national response. Particular attention should be paid to the role of gender inequality and gender based violence, income inequality, stigma and discrimination, violation of human rights, and social marginalization. Based on this evidence-gathering process, national stakeholders should devise comprehensive recommendations to include in their national HIV strategic planning process that draw upon and combine behavioural, biomedical and structural strategies to enable prevention of HIV transmission. All providers of prevention services should use a common language to describe their activities and should implement and monitor activities according to clearly defined protocols. National plans should include specific population and geographic priorities, articulate causal pathways, describe how synergies among different prevention strategies will be captured and maximized, and set clear, time-bound targets for coverage, quality and impact.

Implementing combination prevention programmes. National AIDS authorities, programme managers and AIDS advocates must deal with the political as well as the technical aspects of HIV responses. Strategic advocacy and alliances can help national AIDS authorities to allocate their resources to the settings and groups most in need, and to build demand for fair effective programming. Successful and sustained implementation at scale requires building the multi-sectoral workforce required to design, manage and assess combination prevention programmes. HIV prevention programme managers should provide more intensive and ongoing oversight to these programmes, and incentives to maximize coordination among diverse providers and to capture programmatic synergies. Increased attention should be paid to quality improvement, and to documenting and analyzing the costs of prevention services so as to improve programme efficiency.

Monitoring and evaluation combination prevention programmes. Combination prevention efforts require substantially greater attention to, and investment in, monitoring and evaluation. Not only must monitoring and evaluation systems do a better job of describing what is occurring – the content and standards of services, how many people are being reached by services, who is being reached, etc. – but significantly stronger focus is needed to monitor intermediate programme outcomes, and their contribution to ultimate impact. Many projects or programme components will aim to build service capacity, change attitudes or behaviour, or to create a more enabling environment. Triangulation of qualitative and quantitative data from programme evaluations, gender and human rights audits, surveys and participatory action research should be used to monitor these intermediate results. However, reducing the rate of new infections is the ultimate intended impact of HIV prevention interventions. Until a practical tool is available for measuring HIV incidence at programme level, decision-makers need to rely on periodic estimations of HIV incidence and modelled numbers of infections averted by particular programmes. Resources are always scarce. National AIDS authorities face a difficult challenge in allocating adequate funds and attention to monitoring and evaluation of prevention programmes, but they have broad support of international donors and technical agencies to do so - including support to build the capacity needed to improve the tailoring, coverage and effectiveness of combination prevention programmes over time.

Existing prevention efforts have already achieved measurable success, with the global number of new HIV infections in 2009 estimated to be 19% lower than the number in 2001. The prospect of new ARV based prevention technologies, and eventually a vaccine, are also brighter in 2010 than ever before. Combination prevention – including positive health, dignity and prevention, local capacity development and coordination for efficiency and sustainability – offers the best immediate opportunity to radically improve on these achievements. This inclusive, systematic, rights-based, evidence informed and milestone-driven approach to meeting local HIV prevention needs is feasible. Putting it into practice will help ensure that HIV responses outpace the epidemic in every country, and will move the world closer to UNAIDS' global vision – *Zero new HIV infections, Zero discrimination and Zero HIV related deaths* (UNAIDS, 2010b).

Figure 1. Interacting causes of HIV risk and vulnerability



Introduction

There is good news about HIV prevention. Globally, new HIV infections have fallen by 19% since 2001, and in over 30 countries, the decline has exceeded 25%. Yet the urgent need to further strengthen HIV prevention efforts is still apparent. In 2009, an estimated 2.6 million people worldwide became newly infected with HIV (UNAIDS, 2010a). For every individual who initiated antiretroviral therapy, two new HIV infections occurred (UNAIDS, 2010a). As the long-term queue for HIV treatment lengthens, the continuing high rate of new HIV infections threatens the practical viability of global efforts to provide universal access to antiretroviral therapy for those who need it.

Box 1. Combination Prevention Defined

The UNAIDS Prevention Reference Group agreed in December, 2009 that combination prevention programmes are:

... rights-based, evidence-informed, and community-owned programmes that use a mix of biomedical, behavioural, and structural interventions, prioritized to meet the current HIV prevention needs of particular individuals and communities, so as to have the greatest sustained impact on reducing new infections. Well-designed combination prevention programmes are carefully tailored to national and local needs and conditions; focus resources on the mix of programmatic and policy actions required to address both immediate risks and underlying vulnerability; and they are thoughtfully planned and managed to operate synergistically and consistently on multiple levels (e.g. individual, relationship, community, society) and over an adequate period of time. They mobilize community, private sector, government and global resources in a collective undertaking; require and benefit from enhanced partnership and coordination; and they incorporate mechanisms for learning, capacity building and flexibility to permit continual improvement and adaptation to the changing environment..

Despite the clear need for stronger efforts to prevent new HIV infections, prevention programmes are badly short changed in most countries. According to country spending reports, the median prevention share in HIV spending is 21% – substantially below the 45% proportion recommended by UNAIDS' resource needs projections to achieve universal access. Extrapolating from available spending data, an analysis by the Global HIV Prevention Working Group estimates that total HIV prevention spending in low- and middle-income countries in 2009 amounted to less than one-third of sums needed to achieve universal access to essential prevention strategies (Global HIV Prevention Working Group, 2010).

This paper summarizes the approach to HIV prevention programming known as "combination prevention" that UNAIDS recommends to achieve the greatest and most lasting impact on reducing HIV incidence and on improving the well-being of affected communities around the world. It provides a framework for defining essential prevention strategies that has been debated and agreed by the UNAIDS Prevention Reference Group (see Box 1), and it goes further to highlight key issues in the planning, implementing and monitoring of combination prevention programmes. The paper is primarily intended for use by HIV policy makers, and technical support providers at national and regional levels, but it also may be useful for other stakeholders who are developing or evaluating HIV and sexual and reproductive health programmes in the field. It builds directly upon previous UNAIDS guidance on HIV prevention (UNAIDS 2005, UNAIDS 2007) (see Figure 2).

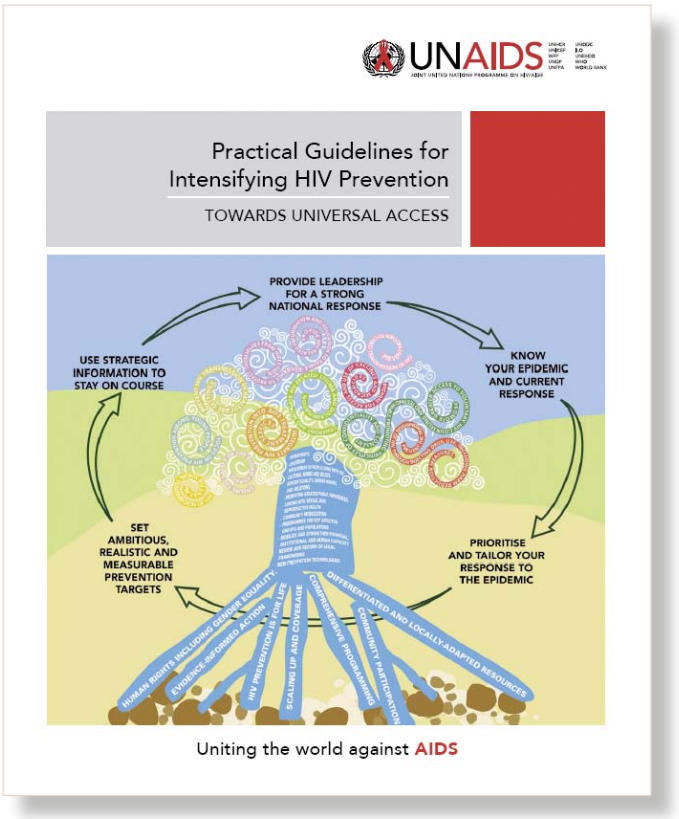


Figure 2: UNAIDS prevention planning guidelines outline the Know Your Epidemic/ Know Your Response approach. They recommend policy and programmatic actions for low, concentrated, generalized and hyperendemic settings, and 14 key audiences.

The starting point for "combination prevention" programming is a timely, thorough and evidence-informed understanding of one's HIV epidemic and the response – the approach often referred to as ""Know Your Epidemic/Know Your Response" (UNAIDS, 2007). Using the best available research and program experience, combination prevention involves the strategic, coordinated use of different classes of prevention activities—biomedical, behavioural, and structural[1]— to design interventions[2] that operate on multiple levels (e.g., individual, relationship, community, societal) and respond to the specific needs of relevant audiences and documented modes of HIV transmission.

Box 2: Risk and vulnerability

Risk is defined as the probability that a person may acquire HIV infection. Certain behaviours create, enhance and perpetuate risk. Examples include unprotected sex with a partner whose HIV status is unknown; multiple unprotected sexual partnerships; injecting drug use with contaminated needles and syringes. Vulnerability results from a range of factors that reduce the ability of individuals and communities to avoid HIV infection. These may include: (i) personal factors such as the lack of knowledge and skills required to protect oneself and others; (ii) factors pertaining to the quality and coverage of services, such as inaccessibility of services due to distance, cost and other factors (iii) societal factors such as social and cultural norms, practices beliefs and laws that stigmatize and disempower certain populations, such as women and girls, or men who have sex with men, and act as barriers to essential HIV prevention messages. These factors, alone or in combination, may create or exacerbate individual vulnerability and, as a result, collective vulnerability to HIV.

Source: UNAIDS 2007, adapted from UNAIDS 1998.

1 Structural factors, for the purposes of this document, are environmental conditions outside the control of individuals which influence their perceptions, their behaviour and their health. This broad view of structural factors may include features of the social, cultural, economic, political and physical environment. Structural interventions are activities designed to alter specific environmental features – such as inequitable gender norms, or HIV-related stigma– so as to create a more enabling environment for HIV prevention, treatment and care and support. For reviews of the extensive literature and perspectives on the importance of environmental conditions for HIV programmes, see Sumartojo, 2000; Auerbach et al. 2009.

2 UNAIDS defines an intervention as a defined set of activities designed to bring about a change in some aspect of a specific audience and setting (UNAIDS MERG 2010). The design, implementation and evaluation of interventions can and should be carried out by, or in partnership with, the specific audiences involved.

Using different prevention strategies in combination is not a new idea[3]. Indeed, as this paper explains, combination approaches have been used effectively to generate sharp, sustained reductions in new HIV infections in diverse settings. Combination prevention reflects common sense, yet it is striking how seldom the approach has been put into practice. In part, this reflects both uncertainty among many HIV decision-makers regarding the necessity of structural interventions (as opposed to focusing all resources on the limited strategies proven to reduce immediate risk), and questions about how best to plan and manage biomedical, behavioural and structural interventions in a unified, coordinated manner on a national scale. This paper does not aim to articulate new principles or radical new approaches, but rather to summarize the case for, and provide practical guidance to national programme managers and other stakeholders on, these key points. The guidance in this paper is consistent with and complementary to UNAIDS' previous guidance on *Intensifying HIV Prevention* (UNAIDS 2005; UNAIDS 2007), its key concepts are embedded in the UNAIDS Outcome Framework 2009-2011 (UNAIDS, 2009), and UNAIDS 2011-2015 Strategy (UNAIDS 2010b), which highlight the results in the biomedical, behavioural and structural domains, and stresses that these are interdependent.

Combination prevention addresses three common limitations of existing prevention efforts:

1. Prevention efforts to date have overwhelmingly focused on reducing individual risk, with fewer efforts made to address societal factors that increase vulnerability to HIV (Gupta et al., 2008) (see Box 2). National programmes seldom include robust support for structural interventions to change policies and social norms that block the AIDS response, and existing efforts are insufficiently grounded in human rights or integrated with the broader development agenda. UNAIDS' combination prevention framework puts structural interventions —including programmes to promote human rights, to remove punitive laws that block the AIDS response, and to combat gender inequality and HIV related stigma and discrimination— at the centre of the HIV prevention agenda.

2. National programmes too often consist of a collection of diverse projects and services with inadequate focus on joint planning to capture potential synergies, to maximize impact and to sustain prevention gains over time (Bertozzi et al., 2008; Padian et al., 2008). Too often, national prevention efforts have key programmatic, policy and investment gaps and investments that are poorly linked with documented epidemiological trends and with the underlying drivers of the epidemic (UNAIDS, 2009a). They seldom drive toward specified results and benefit from strong results-based management (Bertozzi et al., 2008). Combination prevention aims to replace this fragmented and ad hoc approach to prevention programming with an effort that is more strategic, synergistic, and better-managed.

3 Since the unset of the Global AIDS response, many implementers and researchers have recognized that HIV programmes could be impeded or facilitated by social, economical, cultural and political conditions (Parker et al 1987; Chen et al 1991; Sweat & Dension 1995; Tawil et al., 1995). In 1996, Jonathan Mann, the first director of WHO's Global AIDS Programme, and his co-author, Daniel Tarantola, emphasized the need to couple interventions to reduce individual risk with broader community- and societal-level strategies to alleviate vulnerability to infection (Mann & Tarantola, 1996). In 2000, a special volume of JAIDS collected a number of revised papers that distilled the available evidence and perspectives on strategies to promote an enabling environment as well as to deliver clinical services and behaviour change interventions. In 2002, the Global HIV Prevention Working Group called for "a carefully planned combination" of diverse prevention strategies that target different modes of transmission and operate at multiple levels (Global HIV Prevention Working Group, 2002). With the launch of its HIV prevention policy position paper in 2005, UNAIDS advanced international consensus and intensified its advocacy for the strategic, simultaneous implementation of a combination of essential policies and programmatic actions to reduce HIV risk, vulnerability and impact through diverse means (UNAIDS, 2005), and called this "comprehensive" HIV prevention. UNAIDS' 2007 prevention guidelines formalized the consensus that national programmes must intervene strategically in multiple ways (biomedical, social, legislative, etc.) and must invest both in short-term goals (e.g. HIV awareness and knowledge, decreased partner change, increased condom use, access to HIV testing and counselling) and in shifting the societal matrix of ideas, norms and opportunities that make healthy outcomes more widespread and sustainable (UNAIDS, 2007). In 2008, a summary article in a special Lancet series on the future of HIV prevention emphasized the need to combine diverse approaches and levels in a strategic, comprehensive, evidence-informed manner (Piot et al., 2008). In 2009, researchers commissioned through the aids2031 project examined various conceptual, methodological and evidentiary issues associated with the social intervention strategies that are required to make rights-based and evidence-informed combination prevention a reality in diverse settings (Auerbach et al., 2009; ICRW, 2009).

Multi-stakeholder HIV prevention planning workshop convened by the National AIDS Council, Zambia, 2009.

3. Weak investments in integrated planning monitoring and evaluation systems —systems that specifically describe national and sub-national programme components and assess their individual and combined impact— reduce public confidence in HIV prevention efforts. The lack of rigorous programme monitoring linked to results also prevents programme managers and implementers from improving their efforts over time

Some of the world's most successful HIV prevention programmes were conducted over 20 years ago (UNAIDS 2001). They succeeded despite the far less extensive knowledge base that was available at the time. The approach outlined here incorporates strategies for building a more complete evidence base – partly through "learning by doing." The paper specifically draws from suggestions, comments and inputs provided by UNAIDS Prevention Reference Group, which debated and deliberated on planning, implementing, monitoring and evaluation of combination prevention programmes in March 2009, and more intensively during a three-day meeting in Montreux, Switzerland, in December 2009.

While this paper focuses on HIV prevention, it is important to stress the integral links between HIV prevention and treatment, and between HIV responses and broader health and development efforts that are driving toward achieving the Millennium Development Goals (MDGs). With increasing signs that treatment scale-up has a potentially vital role to play in HIV prevention (Montaner et al., 2006; Granich et al., 2009; Wawer et al., 2005; Quinn et al., 2000), it is clearer than ever that HIV prevention and treatment are interdependent and mutually reinforcing (UNAIDS, 2006b). In addition, structural interventions such as community mobilization to support human rights, or policy dialog and action to increase food security, benefit the overall drive for Universal Access to HIV prevention, treatment, care and support and to achieve the Millennium Development Goals.

More effective implementation of combination prevention requires implementing established guidelines for a rigorous, evidence-informed approach to prevention planning, evaluation and programme management. However, applying a combination prevention framework should not be regarded as a purely technical exercise to be implemented by public health agencies. By definition, combination prevention requires the active engagement and collaboration of diverse sectors and stakeholders. This in turn requires opening new political spaces for dialogue and joint action. An effective combination prevention approach will draw on the wisdom, experience and unique programmatic reach of affected communities, faith based organizations, the private sector, women's

Figure 3:

A *"modes of transmission"* for synthesizing epidemiological, behavioural, and HIV programme expenditure data (NASA) has been used to guide reorientation of HIV prevention programmes in several countries in East and Southern Africa, with support from UNAIDS Secretariat and the World Bank . Other regions are using similar mixed strategies for triangulating data sources about the epidemic, the environment, and existing responses, to arrive at evidence-informed recommendations for programming (see, e.g., Figure 4).

groups and people living with HIV, as well as government, non governmental service providers and researchers.

I. The case for combination prevention

Recent analytical studies – including modes-of-transmission (MoT) studies and HIV prevention syntheses sponsored by UNAIDS (See Figure 3), as well as a special series of research papers commissioned by The Lancet – have identified a number of weaknesses in existing prevention efforts (The Lancet Series on HIV Prevention, 2008). They indicate that while combination prevention is widely endorsed in the AIDS policy discourse, it is seldom implemented. Key weaknesses cited include: a) failure to attend to the populations at greatest risk; failure to focus resources on primary transmission routes and unexplained variations from year to year in resources for key prevention strategies, c) the striking deficit of structural interventions to address underlying causes of vulnerability, and d) inadequate prevention services for people living with HIV.

To overcome these weaknesses, HIV research and programme experts, civil society and policy makers began in recent years to unite behind the broad concept of "combination prevention." Combination prevention is calculated to assist prevention planners and programmers in facing one of the central challenges in HIV prevention – "coming to terms with [the inherent] complexity" of the epidemic (Piot et al., 2008). Six defining features of combination prevention programmes are listed in Box 3.

The emergent consensus behind combination prevention recognizes three simple and fundamental points that are central to all health and development practice: First, not everyone in a country or district is at equal risk, subject to identical risks, or likely to transmit a pathogen to others

Box 3: Key Features of Combination Prevention Programmes

1. They are carefully tailored to national and local needs and conditions- i.e. they are based on current information on the modes of transmission, the populations or groups most at risk of exposure and transmission, and the context that shape their risk and vulnerability
2. They include the strategic mix of structural as well as biomedical and behavioral approaches that are required to meet the needs of those groups, focusing both on their immediate risks and underlying causes of vulnerability. Through structural interventions they create a more enabling environment for prevention action.
3. They are planned to operate synergistically and consistently over time, on the multiple levels that reinforce or challenge risk behaviour.
4. They prioritize investments strategically and with the full engagement of affected communities, mobilizing resources in the community, the private sector, government and internationally to achieve needed participation, coverage and continuity.
5. They require, benefit from, and invest in enhanced partnership and coordination in the design, resourcing and management of programmes, with special attention to investment in decentralized and community responses.
6. They incorporate sufficient flexibility to permit ongoing assessment, improvement of strategies, and use of new tools and approaches to enable strategies to evolve in response to epidemiological, technological, or social changes.

(see Hankins et al., 2004). Rational planning for HIV prevention relies on an accurate picture of the nature and distribution of the modes of HIV transmission and of the behaviours and individual, family/relationship, community and societal factors that produce variable risk and vulnerability within the broader population. This can change dramatically overtime (see Figure 4).

Second, within any given key population[4], gender, age and social situations are at play, there is extensive individual variation in people's attitudes, capacities and circumstances. People's needs also change over their lifetime and in different settings. Therefore, an array of tools and strategies is required to help ensure that everyone at risk will have access to an effective approach that is acceptable, accessible and affordable for them.

Third, in HIV as with health in general, an individual's behaviour and health outcomes are shaped by – not independent of – a range of factors in the context in which people live (see Figure 5 e.g.; Mann et al., 1992; Waldo & Coates, 2000; Auvert et al., 2001). The role of "environment" in public health has been recognized for over a century (see aids2031 Programmatic Working Group, 2010) Since the behaviours that may result in HIV transmission – sexual behaviour, drug use, human reproduction, and receiving or delivering health care services – are inherently social (e.g., Herdt and Lindenbaum, 1991; Mann et al., 1996; Friedman et al., 2006; Kippax,

4 For the purposes of this paper, key populations are" those who are key to the epidemic's dynamics, and to the response." (International HIV/AIDS Alliance, 2004). These include men who have sex with men, sex workers and their clients, and people who inject drugs, their sexual partners, and people living with HIV.

Figure 4: Modeling changes in the modes of HIV transmission in Thailand based on regular biological and behavioural surveillance.

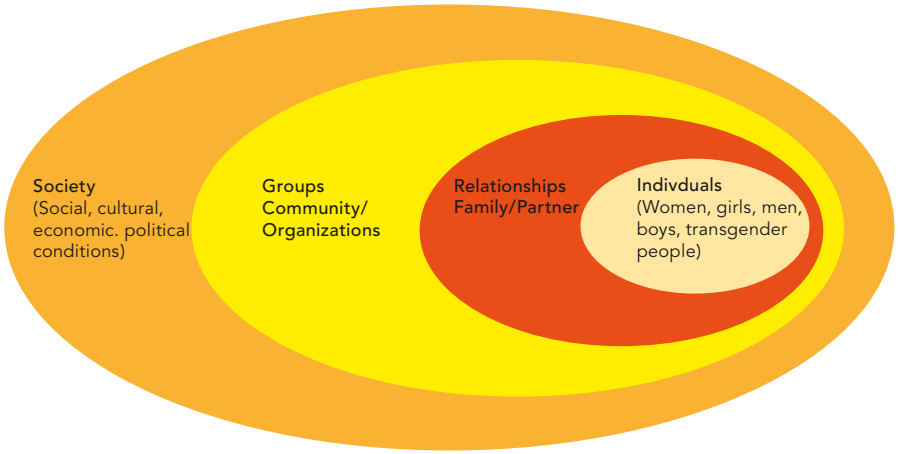
Source: Wiwat Peerapatanapokin (2009)

2008), efforts to promote HIV risk reduction must address not only individual knowledge, attitudes and choices, but also the specific features of the social, cultural, political and economic environment that affect individual and collective attitudes behaviour, and vulnerability. Structural interventions – activities designed to change such environmental factors – are thus part of the core business of HIV prevention[5].

In addition to these basic social science and public health principles, the emergent consensus on combination prevention is supported by analysis of successful country programmes. Virtually every sustained public health success has depended on the strategic combination of biomedical, behavioural and structural prevention strategies to address individual level risks and to create a more enabling environment for health (Wohlfeiler & Ellen, 2007). In the HIV response, the countries that have generated sharp, sustained reductions in new HIV infections have used a combination prevention approach. (See Box 4.)

5 A widely voiced critique of the "ABC" model of HIV prevention for sexual transmission was that it was unrealistically "individualistic," giving too little attention to the social, cultural and material factors that shape and constrain the behaviours that put individuals at risk (Hankins et al, 2004). Societal constraints are particularly effective in reducing the choices and autonomy of women, young people, and marginalized groups (UNAIDS, 2008). These supra-individual barriers and constraints are at the heart of the distinction between vulnerability and individual HIV risk (UNAIDS, 1998, see Box 1).

Figure 5: **A Social Ecological Framework** - indivdual action is shaped by immediate life conditions, including relationships, community and occupational groups and organizations, and by broader societal factors



Box 4. Combination prevention and the HIV response

Support for combination prevention is based on nearly three decades of experience in preventing new HIV infections.

Uganda. The first clear prevention success story in sub-Saharan Africa, the country combined an array of biomedical, behavioural and structural strategies, including concerted efforts to alter social norms regarding partnerships outside marriage (Green et al., 2006), investment in condom promotion (USAID, 2002), the visible involvement of leaders at all levels of society, and a commitment to the destigmatization of HIV and to the empowerment of people living with HIV and affected communities (UNAIDS, 2001) (For a thorough analysis see Kirby, 2008).

Thailand. Responding to strategic information indicating that its early epidemic had shifted from injecting drug users to sex workers and their clients, Thailand lowered the number of new infections from 143,000 in 1991 to 19,000 in 2003 (UNAIDS, 2006) through a multi-tiered programme that promoted community inclusion and caring for people living with HIV, provided high visibility of HIV through mass communication programming, promoted and provided HIV counselling and testing, strengthened STI services, built the capacity of national and community based organizations, pioneered the combined structural/biomedical/behavioural intervention known as the 100% Condom Programme, and invested considerable resources in social change strategies to alter male social norms regarding sex outside of marriage.

Brazil. With a highly diverse, concentrated epidemic, Brazil has closely integrated prevention and treatment programmes, with strong political support for a vigorous HIV response, the national AIDS programme allocated substantial resources and services towards key populations (including people who use drugs, sex workers, and men who have sex with men and transgendered people), massively distributed condoms, provided access to quality STI and care services, supported community-level social marketing campaigns to raise HIV awareness and encourage reductions and risky behaviours, and grounded its national response in human rights principles, social solidarity, and community empowerment strategies. (Okun, 2006) While similarly situated countries experienced rapid increases in HIV prevalence, Brazil's epidemic in 2000 was only half the size it was earlier projected to be by the World Bank (Okun, 2006)

Box 4. Combination prevention and the HIV response (continued)

Dominican Republic. Benefiting from national household surveys and other data sources, the Dominican Republic has focused considerable efforts on addressing the primary driver of its national epidemic – HIV transmission in the context of sex work. In particular, government policy changes similar to the 100% Condom Programme were implemented, supplemented by community solidarity and empowerment initiatives for sex worker communities (Kerrigan et al., 2006). Near-universal condom is reported among sex workers, and HIV awareness efforts have resulted in radical changes in adult sexual behaviours (Halperin et al., 2010). With a strong national investment in HIV testing and counselling, Dominican Republic reports the highest percentage of people who know their HIV status of any country in Latin America and the Caribbean (WHO, 2009a). With the combination of these diverse efforts, the Dominican Republic has seen statistically significant declines in HIV prevalence (Hallett et al., in press; Halperin et al. 2009).

India. A pioneering collaboration between the national government, regional governments, the Bill & Melinda Gates Foundation, and civil society has resulted in a focused, rights-based expansion of health and HIV prevention services for key populations (Bill & Melinda Gates Foundation, 2008). Consistent with the tenets of combination prevention, this service expansion was based on extensive epidemiological and behavioural data, as well as social science research involving the focus communities. These initiatives built on the country's long-established efforts to provide high quality STI services and to provide and promote condom use by sex workers. Avahan has used a community empowerment approach, with peer led outreach and micro-planning, and advocacy with police and judges to stop harassment in sex work settings that undermined prevention efforts (UNAIDS, 2008). India's growing efforts to address its HIV epidemic were further buttressed in 2009, when the country's High Court invalidated the longstanding legal prohibition on sexual activity between people of the same sex, removing an important source of stigma and discrimination against men who have sex with men.

Rwanda. Although definitive evidence of a decline in HIV incidence and prevalence in Rwanda is not available, the country has seen a consistent decline in HIV prevalence among pregnant women in sentinel antenatal sites and has maintained an adult HIV prevalence considerably lower than many of its neighbours. Focusing on the heavily affected population of sex workers, Rwanda has achieved 83% coverage for prevention services for sex workers and the highest percentage in sub-Saharan Africa of sex workers who have received an HIV test in the previous 12 months (65%) (WHO, 2009). With a per capita gross domestic product of $250, Rwanda has already achieved universal access to targets for services to prevent mother-to-child transmission. Rwanda has pursued a number of far-reaching initiatives to address women's vulnerabilities (CNLS Rwanda, 2010); with women representing a majority of the country's parliamentarians, Rwanda has implemented strong laws combating gender-based violence, recognizing women's inheritance rights, and granting the women the right to work without their spouse's consent.

II. Planning combination prevention

Good practice in HIV prevention programming demands a rigorous, evidence-driven, goal-oriented process that works to achieve well-defined objectives that respond to the realities of the groups most affected by the epidemic, and that are well integrated in the national HIV plan[6]. This section outlines key steps in the planning of evidence-informed combination prevention programmes, building upon existing guidance (UNAIDS, 2007; World Bank 2007).

Inclusive, transparent, evidence-informed planning process

National HIV strategic planning should include an open, inclusive, transparent process for identifying key prevention priorities and guiding allocation of finite resources (UNAIDS 2005, World Bank, 2007; UNAIDS 2007). This process should engage key stakeholders, including people living with HIV, strategic government ministries[7], key affected communities, women's groups, the private sector, community and cultural leaders, individuals with relevant research and evaluation expertise (e.g., behavioural, sociological, epidemiological), donors and other relevant organizations. Ensuring the full engagement of affected communities in the design of the programme is one of the defining features of combination prevention (see Box 3).

Time and support should be provided to enable participants in this process to assess available data and assist national authorities in identifying key programmatic priorities as well as important synergies. A central purpose of this participatory planning process is political: to build relationships among stakeholders, and to forge agreement on common approaches and outcomes. In particular, attention should be paid to developing consensus that evidence should guide decision-making

6 While HIV prevention planning takes place on many levels – from the community and project to the nation and even the region, it should be organized and timed so as to feed into national HIV strategic planning processes, so that it contributes to the "one national HIV strategic plan" as recommended under the "Three Ones" policy (UNAIDS (2004).

7 Which ministries are relevant – i.e. which have important roles to play in HIV prevention – will depend upon the epidemic scenario and other national characteristics. In all countries, ministries of health, education, justice and gender, women and youth will be important stakeholders. In countries or municipalities where HIV prevalence is high, it is likely that all sectors will have roles to play in the HIV response.

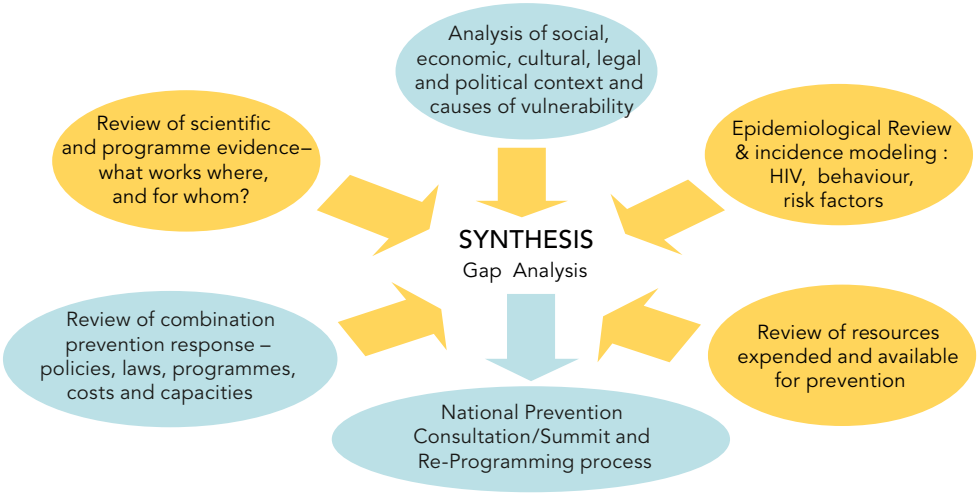
on prevention priorities and resource allocations, and that all parties are accountable for human-rights-based action and results. The participatory forum for combination prevention planning ideally will function on an ongoing basis, allowing stakeholders to collectively assess progress and adapt programmatic strategies in response to emerging evidence and findings from monitoring and evaluation[8].

Synthesis methods to "Know Your Epidemic/Know Your Response" – have been used by a number of countries, from Swaziland to Thailand, to review and redesign their HIV prevention programmes. These involve assembling and applying available knowledge about the epidemic, the over-all national response, about factors that increase or decrease risk and vulnerability, about community needs and priorities, and about existing programmes and capacities. This knowledge is usually scattered or held in separate "silos" of expertise and action (see Figure 6). UNAIDS' experience in over 25 countries shows that bringing together these kinds of expertise and knowledge is a feasible and powerful approach to improving prevention planning. Important elements of the approach include identifying relative modes of HIV transmission[9], identifying geographic patterns, estimating the size of key populations, and documenting key structural factors that increase risk and vulnerability, and describing the existing national response.

Identifying relative modes of transmission

Rational prevention planning requires an understanding of the relative contribution of different modes of HIV transmission to incident HIV infections, as well as identification of the populations most in need of prevention services. Characterizing incident infections has long been a challenge in the HIV field – not only in resource-limited settings but in high-income countries, as well (Mastro et al. 2010). Bringing together biomedical, behavioural and structural practitioners and in dialog with affected communities, networks of people living with HIV/AIDS has proved energizing, and in many countries is a novel approach.

Figure 6: Know Your Epidemic / Know Your Response - knowledge and methods for designing combination prevention programmes



Source: Adapted from UNAIDS and World Bank, 2009

8 To obtain support for the participatory approach to prevention planning, national AIDS authorities may desire to seek the assistance of the AIDS Strategy and Action Plan Service, housed at the World Bank, which had supported the development and review of strategic plans in 58 countries as of December 2009. Support for facilitation and guidance on programming processes are also available through regional Technical Support Facilities.

9 As with all models, estimates of relative modes of transmission depend upon the data available and used in the analysis. They always should be interpreted in light of additional data sources.

In recent years, new tools have emerged that triangulate among multiple data sources to obtain a single-year snapshot of incident HIV infection. One especially useful tool is known as "estimating HIV incidence by modes of transmission" (Gouws et al., 2006). This approach was used to identify relative modes of transmission in 27 countries in 2008-2009 and to facilitate prevention syntheses that identified key programmatic gaps.

Identifying geographic patterns

In addition to understanding who is most likely to become infected and how these new infections are occurring, prevention planners also need to understand where new HIV infections are happening. Identifying of important geographic variations in HIV risk enables countries to focus services where they are most needed.

In Kenya, for example, there is a more than 15-fold variation in provincial HIV prevalence, while a more than 16-fold difference in prevalence is apparent in Tanzania. Within Benin, there is a 12-fold difference in HIV prevalence among the highest-prevalence and lowest-prevalence parts of the country. In all regions, HIV prevalence tends to be much higher in cities than in rural areas. Without recognition of the epidemic's varying geographic intensity, more heavily affected settings may receive insufficient resources (Aids 2031 Programmatic working group, 2010). Urban-rural differences in risk and access to services must be taken into account as should the extraordinary challenges in humanitarian emergencies.

Estimating the size of key populations

Effective planning and evaluation of combination HIV prevention also requires reliable data on the size and distribution of key populations. Here, too, the evidence base and tools for planning have significantly expanded in recent years. WHO, the UNAIDS Secretariat, and technical partners such as CDC have sponsored training workshops on user-friendly strategies for population size estimation (UNAIDS, 2003). UNAIDS has developed a monitoring and evaluation framework for key populations that countries are now using to guide programmatic action. The growing number of population-specific HIV behavioural and serosurveys, combined with modelling techniques, has improved the evidence base for action regarding sex workers, men who have sex with men, injecting drug users, and prisoners (Vandepitte et al., 2006; Baral et al., 2009; Mathers et al., 2008; Dolan et al., 2007). The Avahan India AIDS Initiative undertook a systematic approach to map key populations in six high-prevalence states, using findings to guide programme implementation, community education and outreach, and monitoring and evaluation (Bill & Melinda Gates Foundation, 2008 [10]).

Documenting key structural factors that increase risk and vulnerability

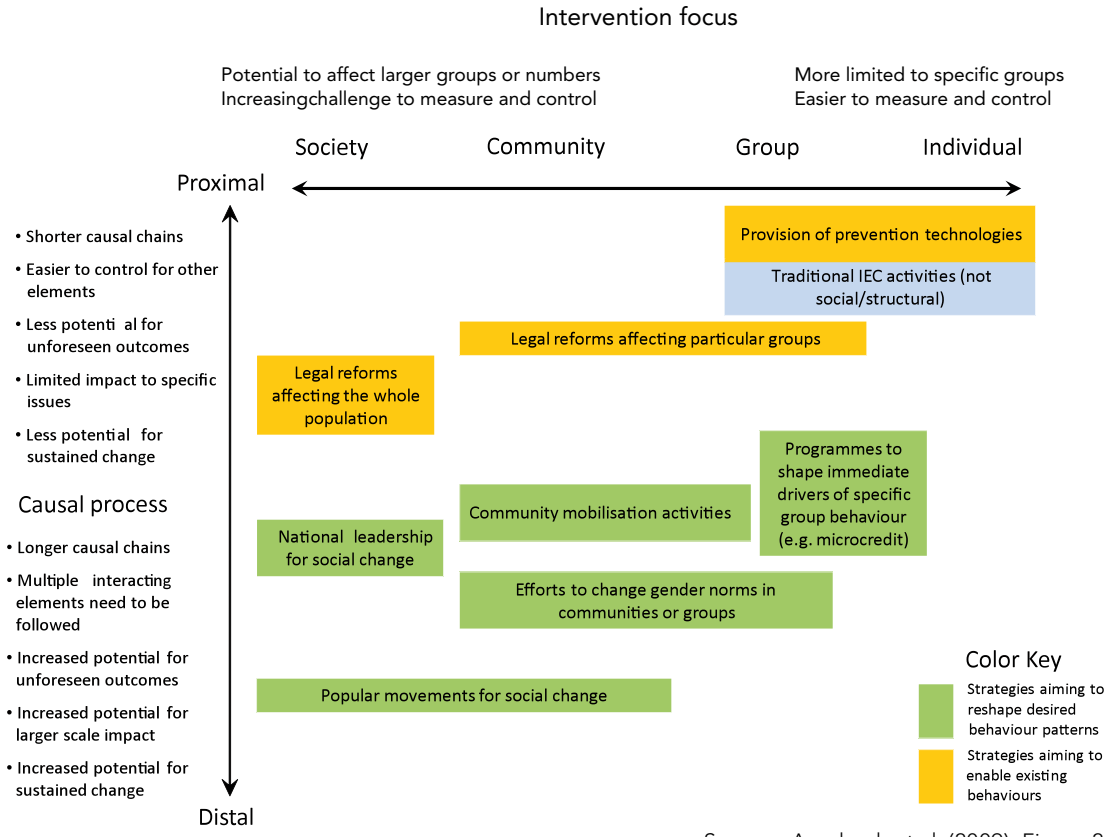
Combination prevention focuses increased attention on contextual factors that may increase HIV vulnerability or reduce the reach and impact of prevention programmes. In addition to documenting trends and patterns in incident HIV infections and identifying their proximate determinants (Boerma and Weir 2005), rational planning of combination prevention also requires analysis of available research concerning the social, cultural, economic and political forces and conditions that contribute to HIV transmission. Social and behavioural scientists with backgrounds

10 For support in estimating the size of key populations, national Aids authorities can request technical support from the UNAIDS country team or from regional Technical Support Facilities.

in gender, health, sexuality and political economy and legal experts specialized in human rights, have the theories and methods to assist national AIDS planning to ask the right questions about social determinants and to analyze the range of structural factors that contribute to HIV risk and vulnerability (see, for example, the framework offered by the aids2031 Social Drivers working group, reproduced in Figure 7).

A broad coalition of health and human right experts has developed tools to help countries define and strengthen their legal and policy environments to support HIV prevention (Inter-Parliamentary Union, UNAIDS and UNDP, 2007; UNAIDS, "HIV and the Law"[11]). Among the legal matters that should be examined is the strength of the country's protections against HIV discrimination, and provisions that potentially exacerbate societal determinants of HIV risk and vulnerability. With respect to women's vulnerability, this may include laws regarding the right to own or inherit property, or the effectiveness of regulations to prevent violence against women.

Figure 7. aids2031 framework clarifying proximal and distal determinants of HIV risk and vulnerability



Source: Auerbach et al. (2009), Figure 2

11 UNAIDS, "HIV and the Law". Available on-line: http://www.unaids.org/en/PolicyAndPractice/HumanRights/20070618_HIV_Law.asp

Inter-Parliamentary Union, UNAIDS and UNDP (2007), Taking Action against HIV: A handbook for parliamentarians. Available on-line: http://data.unaids.org/pub/Manual/2007/20071128_ipu_handbook_en.pdf

Lance Gable, Katharina Gamharter, Lawrence O. Gostin, James G. Hodge, Jr., and Rudolf V. Van Puymbroeck (2007), Legal Aspects of HIV/AIDS: A Guide for Policy and Law Reform. Washington, D.C.: The World Bank. Available on-line: http://siteresources.worldbank.org/INTHIVAIDS/Resources/375798-1103037153392/LegalAspectsOfHIVAIDS.pdf

Box 5. Maximizing synergies in HIV prevention

Harm reduction programmes: Programmes to reduce HIV transmission through injecting drug use include behavioural interventions to reduce drug use, use of unsterile equipment, and risky sexual behaviours services, HIV testing and counselling and biomedical services including STI services. The nine components of harm reduction (WHO, UNODC and UNAIDS, 2009) are supported by structural interventions which boost their impact, including outreach to law enforcement agencies to minimize harassment of clients and service providers, and legal reform to permit pharmacy-based sale of sterile injecting equipment.

Positive Health, Dignity and Prevention: Although each instance of primary HIV transmission requires the involvement of an HIV-infected and an HIV-uninfected person, prevention services have seldom focused on addressing the needs of people living with HIV. Engaging HIV positive people in averting onward transmission is likely to be most effective in combination, with clinical and interpersonal interventions to increase ART access and adherence, counselling and support for safer sex, and structural approaches, including programmes to eradicate HIV-related stigma and discrimination and gender-based violence, as well as enhancing access to integrated sexual and reproductive health services, and community-building initiatives to organize and engage networks of people living with HIV.

Gender norms, attitudes toward difference and inequality, and other cultural and social factors undergird laws and policies that lead to social marginalization of groups such as sex workers, migrants, men who have sex with men, or people who use drugs. Thus creating a more enabling environment for HIV prevention usually requires both "bottom up" structural interventions to promote community dialogue and mobilization to reflect upon and revise harmful attitudes and norms, and strategic advocacy with leaders to shift noxious policies and laws. Participatory, action research methods provide a powerful strategy to obtain current information about relevant social drivers, while catalyzing social change.

The process of documenting social drivers also affords an opportunity to explore potential linkages between HIV prevention programmes and broader development efforts. In sub-Saharan Africa, for example, where adolescent girls are typically several times more likely to become infected than boys their own age, the evidence-gathering process should examine possible synergies between HIV prevention programmes and initiatives to promote universal primary and secondary education, as studies conducted over the last 15 years have consistently found a relationship between educational attainment and reduced sexual risk behaviours among girls. In documenting the effects of gender inequality on women's vulnerability to HIV, studies should consider possible compatibilities and synergies between HIV-specific programming and broader efforts to empower women and girls, change gender norms, and reduce women's social, economic and legal disadvantages. Similarly, investigating the vulnerabilities of men who have sex with men, sex workers, people who use drugs, prisoners and other disadvantaged groups should be linked with broader efforts to understand discrimination and promote social justice. Planning interventions that will operate synergistically on the individual, relationship, community and societal level factors that reinforce risk behaviour is another defining feature of combination prevention (see Box 5).

Describing the current national response

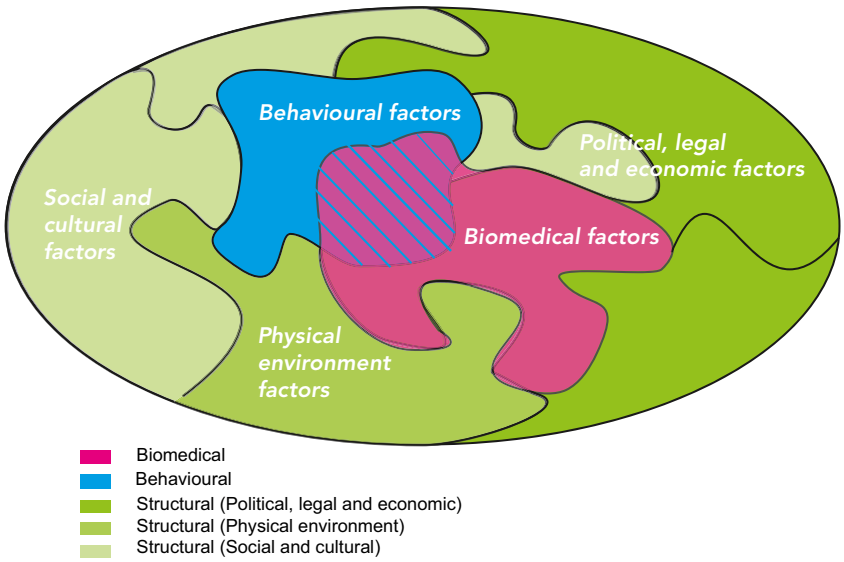
To fully utilize the recommended "Know Your Epidemic/Know Your Response" methodology, particular efforts are needed to better describe the policy and programmatic strategies that are in place, and to capture their results and costs at community or district level. Describing the current national prevention response should be the most straight-forward part of the synthesis review. Clearly, to undertake a gap analysis of what is in place and what is needed, the national AIDS authority should have a complete picture of the services are currently in place, what they cost, and of the human resources and systems that are available. This is rarely the case (Bertozzi et al., 2008). Indeed, one of the most valuable results of the Know Your Epidemic/Know Your Response synthesis process may be to produce such a comprehensive national inventory for the first time. While the reviews may encounter fragmented information and programme descriptions that cannot be compared precisely, synthesis reviews have succeeded in triangulating information from national, state and district AIDS committees, from implementers, from civil society networks and affected communities, and from donors, to produce a summary of "who is doing what." This descriptive inventory should be archived by the national AIDS authority in database form, to provide baseline information for future programme evaluations.

The *Practical Guidelines for Intensifying HIV Prevention* (UNAIDS 2007) listed the recommended strategic information and policy and programmatic actions to meet the prevention needs of 14 different audiences, which can be used as a checklist to facilitate and increase the comparability of these summaries. A new Glossary of HIV Prevention Activities provides standard definitions of building blocks of biomedical, behavioural and structural prevention interventions, so that all the stakeholders and implementers in a national response can define their inputs using a common language (see Box 6). These tools are designed to assist the national AIDS authority to establish a common language among implementers and stakeholders within the country, and to promote the comparability of efforts across countries.

Box 6. A common language for prevention planning

To provide a common language for building this knowledge of "what works" for which populations and settings, the UNAIDS Prevention Reference Group in 2007 recommended that UNAIDS lead the collaborative development of an improved taxonomy of HIV prevention activities, one that provides clear definitions of the range of prevention activities , audiences, objectives, and settings. To that end, UNAIDS has developed a glossary of prevention activities (UNAIDS, 2010b), which includes definitions (with core and additional components and quality criteria) of 23 "building blocks" of prevention interventions that make up combination prevention programmes. This glossary complements the recommendations of "what to do" in four epidemic scenarios (low level, concentrated, generalized and hyperendemic), and for each of 14 key audiences in UNAIDS' practical prevention programming guidance (UNAIDS 2007). Guyana's pathfinding national HIV prevention programming initiative (Ministry of Health, Guyana, 2010) illustrates the power of establishing a common language and quality standards for partners who contribute to the national programme.

Figure 8: Illustrative intervention strategies to design and combine to respond to the risk and vulnerability factors that have been identified through a prevention review



Biomedical intervention strategies to reduce exposure, transmission and/or infection

Male and female condom provision
Drug treatment including opioid substitution therapy, needle and syringe provision
Male circumcision
Biomedical prophylaxis – ARVs in PMTCT services, post exposure prophylaxis, etc.
Appropriate and accessible STI services, ART for prevention
Blood safety, standard precautions in health care setting
etc.

Behavioural intervention strategies to promote individual risk reduction

HIV testing and risk reduction counseling
Behaviour change communication to promote partner reduction, condom use, uptake of HIV testing and counseling, etc.
HIV education
Interpersonal communication, including peer education and persuasion
Social marketing of prevention commodities
Cash incentives for individual risk avoidance
etc.

Social and cultural intervention strategies

Community dialog and mobilization, to demand services; for AIDS competence, etc.
Stigma reduction programmes
Advocacy and coalition building for social justice
Media and interpersonnal communication to clarify values, change harmful social norms
Education curriculum reform, expansion and quality control
Support youth leadership
etc.

Political, legal and economic strategies

Human rights programming
Prevention diplomacy with leaders at all levels
Community Microfinance/microcredit
Training/advocacy with police, judges, etc.
Policies re. access to condoms (schools, prisons etc.)
Review and revise workplace policies
Stakeholder analysis & alliance building
Strategic advocacy for legal reform
Regulation/deregulation, taxes
etc.

Intervention strategies addressing physical environment:

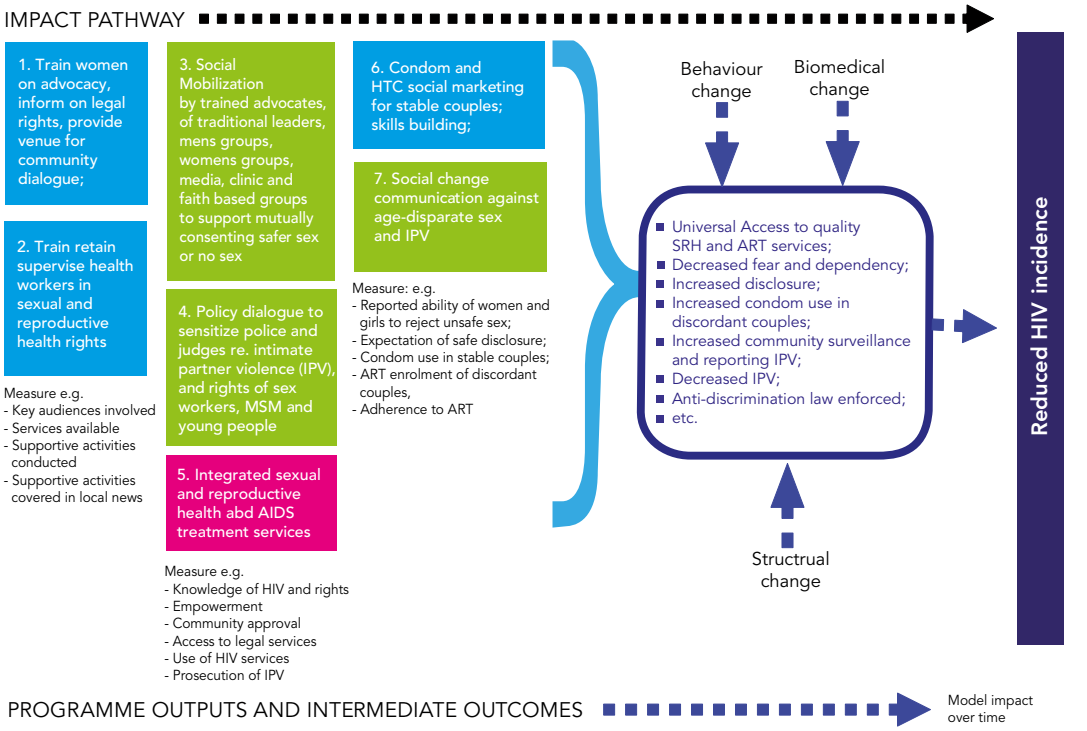
Housing policy and standards
Enhance farming, other modes of subsistence, for food securit
Infracstructure development – transportation, communications, etc.

Articulating the mix or combination that is tailored to meet local needs

The result of this inclusive review process is a unified and deepened understanding of the available evidence —one that encompasses: behavioural and epidemiological trends; the size and characteristics of the key groups in need of prevention services;[12] community views on the main incentives and barriers to risk reduction for each group,— including economic and educational opportunities and the various types of structural factors that shape risk and vulnerability. This synthesis (see Figure 6) provides the robust body of evidence to support an HIV prevention gap analysis – comparing what is needed with a rough inventory of the systems and services that are currently in place. That gap analysis should identify and prioritize the combination of biomedical, behavioural and structural intervention strategies that will best address corresponding causes of risk and vulnerability that were identified in the review (see Figure 8). The synthesis and gap analysis enable evidence-informed decisions about prioritization and goal-setting. Resulting recommendations about key audiences, combination prevention strategies, and their objectives can then be incorporated into the national HIV strategic plan by the national AIDS authority.

The national strategic plan should set specific prevention goals and targets[13] for the short, medium and long term. The urgency of achieving results for people today should not prevent investment in interventions that will yield results over time. The national plan should identify the connections and synergies between different programmatic components – including but not limited to synergies between HIV prevention treatment, care and support and other health and development priorities,

Figure 9: Multiple programme components are combined to reduce HIV incidence. Projects/implementers 1-7 should be accountable for specific outputs and intermediate outcomes, and should coordinate for maximal impact.



12 The UNAIDS prevention guidelines in 2007 identified14 key audiences. See UNAIDS 2007, Tables 2.1-2.14

13 Very recently, a number of countries have endorsed specific ambitious prevention goals. The SADC countries have decided to reduce new HIV infections by 50% by 2015 (SADC, 2009) and many more have decided to virtually eliminate PMTCT by 2015 (UNAIDS, 2009c).

including promotion of gender equality, maternal and child health, and TB and malaria control. The combination prevention approach recognizes the impact of the larger social, economic and political context on HIV so it is well suited to integrating HIV with broader development frameworks such as national Poverty Reduction Strategic Plans (PRSPs). The recommendations for HIV prevention should describe the partnerships to be pursued to capture and maximize these synergistic effects.

For specific programmatic components (e.g. promotion of HIV testing and counselling, integrated sexual and reproductive health services, legal services, HIV and human rights education) as well as for desired synergies, the plan should explain the anticipated causal pathway whereby each component will achieve projected results. Many important HIV prevention services will not reduce HIV incidence directly, but will produce changes that are essential to reducing HIV risk and vulnerability, which in turn influence HIV transmission.

Especially for social or structural interventions, where the causal mechanisms may not be widely understood and quantified, it is essential to identify the cascade of results – including the outcomes that each programme component is expected to produce – that links all the elements of the programme in a causal path toward reducing new HIV infections. Thus the recommendations for HIV prevention in the national plan should state clearly the interdependencies among different program elements – for example, how community mobilization efforts are intended to create a safe environment for most at risk groups to access and use HIV information and clinical services; how increased coverage of quality clinical services will lead to reduced HIV infectiousness. Together these components are expected to increase demand for and supply and use of prevention services, which will lead to significant reduction of HIV incidence[14].

Bearing in mind that the historic failures in HIV prevention programs to invest in structural interventions, national HIV strategic plans should expressly identify the legal, economic, and/or social changes they seek to promote in order to create more enabling environment for HIV prevention, and any other structural factors that need to be addressed. In virtually all settings, it is advisable that plans include specific, budgeted activities to promote human rights to promote gender equality and to combat HIV-related stigma and discrimination and gender-based violence, and to empower PLWHIV to achieve Positive Health, Dignity and Prevention (PFPD report 2009), linked to broader national development efforts.

Improving national systems for monitoring and evaluating combination prevention –and building stronger links between the planning and evaluation phases of the programming cycle – will help advance the evidence base for future planning. Thus monitoring, evaluation and research must be planned and budgeted at the start of the programme planning cycle – not left until the end. New tools are available to help HIV program planning and evaluation to use creative roll-out strategies that include randomization, so that specific combinations of prevention inputs can be linked with their eventual results (Padian et al, 2009). These country-level efforts can be reinforced by more intensive support from international researchers and other stakeholders for efficacy, operational and translational research to strengthen the evidence base for prevention planning.

14 National prevention strategies always outline the logic of their choices. However they rarely provide enough detail to permit coordination and accountability among program components or partners.

III. Implementing combination prevention

Effective implementation of combination prevention requires efforts to address many of the factors that have long impeded prevention efforts of all kinds, including political, institutional and capacity issues that have often kept HIV prevention from reaching its full potential.

Defining and overcoming political barriers

The low priority accorded HIV prevention, including the especially low coverage of strategies to reduce HIV transmission among the world's most at risk populations, reflects the acute sensitivities associated with human sexuality and drug use in many societies. It also reflects an enduring lack of political will to allocate resources and exert leadership on behalf of marginalized populations.

Implementation and oversight of combination prevention programmes involves more than technical expertise; it is also an intrinsically political undertaking (Dickinson and Buse, 2008). There is an urgent need for greater demand and greater support from communities and policy makers for rights-based, evidence-informed combination prevention. To build this support, prevention experts need to speak with one voice, responding in real time with strategic advocacy to overcome the prejudices and political sensitivities that have often impeded implementation of the programmes most likely to reduce HIV incidence. Stakeholder mapping, dialogue, coalition-building and structural interventions such as social change communication and community mobilization of faith based groups and the private sector, may be required to build popular demand for effective programmes. The AIDS movement pioneered use of strategic advocacy and alliances in global health, and the value of these strategies is critical to building constituencies and demand for effective HIV prevention.

Defining and overcoming prevention capacity barriers

In the UNAIDS Universal Access consultations in 2006, country teams repeatedly cited lack of in-country capacity for prevention programming as a critical barrier to programmatic scale-up and effectiveness (UNAIDS 2006b). In many cases the collaboration required to achieve efficiencies and synergies between HIV programmes and the justice, labour, education, social welfare and community systems are under-developed or totally ignored.

Effective implementation of combination prevention requires sufficient personnel to define and tailor programmes at the sub-national level, to synthesize available evidence, to manage multi-component programmes for specific results, to conduct and apply needed research, and to implement robust monitoring, evaluation and programme improvement systems as strategies are brought to scale. Regional approaches to technical support are an important contribution, but given the need for granular evidence and local tailoring of HIV prevention responses, national experts in overall prevention leadership, social science research and political analysis, and in balancing and coordinating biomedical, behavioural, and structural strategies, are needed in every country.

National HIV and development strategies should define the composition and size of the multi-sectoral workforce required to implement their selected HIV prevention strategies on an appropriate scale, and should mobilize resources to support and manage this workforce, just as AIDS treatment workforce is defined and managed[15]. National prevention plans should be accompanied by a costed plan to strengthen this workforce, recognizing the capacities and roles of informal and volunteer service providers, and community systems. It should recommend technical and financial support for these key actors and systems, as well as for needed pre-service and in-service training and supervision.

Photo: UNAIDS

Promoting programmatic coordination, quality and efficiency

While working to design the right combination of activities to address national and sub-national epidemics and their structural contexts, managers of combination prevention programmes should increase their focus on the coordination, quality and efficiency of prevention services. Quality assurance and quality improvement are just as important in behavioural and structural interventions as in the biomedical ones (Auerbach et al., 2009; Maguerez and Ogden, 2010).

With the ultimate focus on results, national aids authorities should take steps such as support for information sharing and multi-sectoral peer reviews, to promote increasing coordination among diverse prevention service providers and between HIV prevention and treatment programmes and broader development initiatives. Incentives and opportunities for collaboration and efficiency such as regular multi-stakeholder meetings, or high profile consolidated reports to national decision-makers, can be included in the annual programme cycle to avoid a fragmented or "silo" approach to service delivery that focuses on single interventions

Building on strengthened documentation of programme components and costs, countries should also endeavour to maximize the efficiency of prevention programmes, as well as their fit to local needs and their cost-effectiveness.

15 Where countries lack the capacity on their own to build needed programmatic skills, assistance should be sought from the UNAIDS Country Team to develop focused capacity-building strategies.

IV. Monitoring and evaluating combination prevention

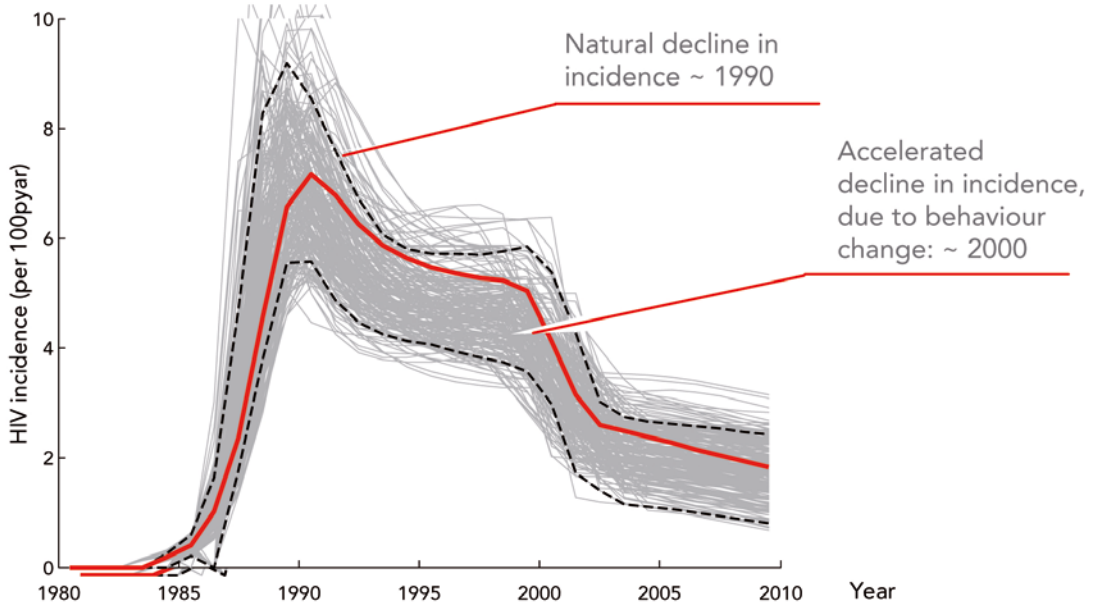
Investment in the monitoring and evaluation of combination HIV prevention programmes has been inadequate. Prevention programmes too often have been poorly described and tracked. Far too frequently, it is impossible to determine from available reports what were the components and coverage of prevention activities (who did what for whom and using what protocols), much less to evaluate whether the components are having the desired impact (Sweat 2008).

Monitoring data need to be collected not for academic interest, but to inform the development, adaptation and realignment of prevention strategies over time. Detailed program descriptions using a common language (using standard definitions of activities, audiences and settings) and with clear statements of what each intervention or service aims to accomplish, are essential building blocks of learning by doing combination prevention. Combination prevention programmes that include diverse biomedical, behavioural and structural interventions and that operate with different objectives and on different time scales will inevitably require a matching mix of monitoring and evaluation methods and systems. In short, combination prevention requires "combination evaluation." The multiple evaluation approaches involved need to be linked and coordinated to permit conclusions regarding both the impact of individual programmatic components and the impact of national prevention programmes as a whole.

Documenting the functioning of prevention programmes

At the most fundamental level, national AIDS authorities need harmonized planning and monitoring and evaluation systems that permit a description of what information services and support are provided to whom and according to which standards (see Box 6). This information is essential to determine if the programme is meeting the first key feature of combination prevention

Figure 10: Zimbabwe Use of Modelling to Assess Impact over Time



Source: Hallett, Gregson, Gonese, et al., Epidemics, 2009

– correct tailoring to local needs and conditions. Equally they require information on the size of populations in need (see above), so they can track service coverage.

Information on the design, implementation and results of the overall national HIV prevention programme should be standardized and detailed enough to support comparisons (e.g. across districts or communities. Since HIV risk and prevention strategies depend on behaviour, and behaviour is shaped by environmental conditions, monitoring systems also should collect longitudinal data on the structural factors that influence the HIV risks of the population prioritised in the KYE/R analysis. Social science methods that evaluate trends in intermediate outcomes such as gender norms or HIV-related stigma, or monitor police enforcement of antidiscrimination laws, or describe the structure or functioning of social networks may provide valuable evidence of whether the structural strategy is operating as intended (CFSC Consortium, 2010).

Participants in a UNAIDS-sponsored think tank on prevention evaluation, in September 2009, emphasized that effective combination prevention requires having fully developed hypotheses or "project impact pathways" in place, that detail the results that each activity is supposed to accomplish (see Figure 9). The monitoring and evaluation system should document the inputs, and track the intermediate and ultimate results along the hypothesized causal path. The think tank also recommended better tracking of the social, political and economic context of HIV programmes to facilitate identification of mediating factors that influence programme effectiveness.

Monitoring the impact of prevention programmes

Although process and output indicators —such as the number of individuals trained, or number of people tested and counselled— and outcome indicators such as levels of stigma or gender-based violence, or rates of condom use at first sex– provide important milestones for monitoring the scale-up and assessment of particular services or components of a programme, they are insufficient on their own to build confidence in prevention programmes' success. HIV prevention activities, by definition, are tasked with reducing rates of HIV transmission. Accordingly, monitoring and evaluation systems must increasingly be pushed to link the outcomes of the component services through special studies to assess the overall impact of HIV prevention efforts on reducing new HIV infections (see Figure 10).

The rate of new HIV infections represents the ultimate impact indicator for HIV prevention programmes. In the absence of a reliable, affordable, user-friendly assay of HIV incidence, other, somewhat rougher tools are available. These include the periodic Modes of Transmission exercises that "triangulate" from available data sources to develop estimates of incident HIV infections in a population. At the same time that increased use is made of estimation methods for new HIV infections, international research institutions should intensify their efforts to develop the needed assays to permit real-time measurement of incident infections in different settings.

While it is evident that all HIV prevention efforts should be judged in terms of their impact on reducing new HIV infection, it may not be possible to prove direct effects of individual programme components on HIV incidence, specifically because their effectiveness lies in the combinations. For example, removing punitive laws or policies will not reduce HIV incidence if no services, or inappropriate services, are available for populations who are most at risk. To evaluate interactions and synergies among program components, new evaluation approaches are needed, based on a foundation of consistent description of the programmatic and policy actions that are in place. Participatory methods, phased introduction of services, adaptive designs, and other innovative research approaches should be used, and increased use should be made of modelling exercises to estimate the net impact, and the number of infectious averted, by particular national programmes (see Figure 10).

National AIDS authorities have barely begun to tap the resources available for strengthening the monitoring and evaluation of combination prevention programmes. A Global HIV M&E Information website offers a web portal where new tools and resources are being posted on a regular basis.[16] Appreciative approaches are available that promote programme improvement, "learning by doing" and mutual accountability (Preskill and Catsambas, 2009). The Global Fund against HIV, TB and Malaria recommends that up to 10% of HIV grants can be devoted to M&E, yet on average, countries allocate less than 2% of their GF grants to M&E including research (Global Fund, 2006). Investing in M&E, and incorporating strategies for change to ensure that national prevention programmes keep up with the epidemic, and incorporate new methods and tools into their response – is a defining feature of combination prevention.

Box 7. Strengthening monitoring and evaluation for HIV prevention

With advance planning, recent experience demonstrates that more rigorous monitoring of the components of combination HIV prevention is both feasible and programmatically valuable. The Avahan India AIDS Initiative demonstrates what can be achieved when adequate human and financial resources are available. Avahan undertook extensive assessment of community needs and attitudes; conducted ethnographic and population mapping research to understand the magnitude, distribution and social context of the focus populations; forged strong working partnerships with governmental and non-governmental stakeholders; developed time-bound milestones to guide scale-up; and implemented rigorous monitoring systems to determine whether programmatic goals had been achieved (Bill & Melinda Gates Foundation, 2008).

The IMAGE project demonstrated on a smaller scale that a combination of biomedical, behavioural and structural approaches could have a significant impact on biological outcomes (Pronyk et al, 2006). Increasingly, national AIDS plans are incorporating monitoring and evaluation of strategies to address structural factors. The South African plan of 2007-2011 extensively specifically addresses human rights (Government of South Africa, 2007). Recently, the new Rwanda plan included a notable section dealing with stigma discrimination, with specific measures proposed to ensure the protection of the rights of people infected and affected, in communities and in workplaces (Rwanda National AIDS Control Commission, 2009). The forthcoming Namibia plan will make similar efforts.

When the Treatment Action Campaign (TAC) turned its attention to HIV prevention, (promoting universal access to PMTCT, condoms, and male circumcision), it followed a strategy of evidence-based advocacy and social mobilization (see TAC, 2009) with the same kind of discipline seen in the Avahan programme. The regional partnership to combat multiple and concurrent sexual partnerships in 10 countries in East and Southern Africa, managed by Soul City, has shown a similar sophistication and rigor in design, implementation, and monitoring (Soul City, 2008) —though it is too soon to evaluate its outcomes. Indeed, rigorously designed and implemented behavioural and structural programmes – the types that should be easily "combined" with biomedical interventions by being planned together to serve the same populations— are likely quite numerous, but they are not so often evaluated, and if evaluated, their results are not often published or widely known.

16 The website, a joint project of the US Government and UNAIDS, can be accessed at http://www.globalhivmeinfo.org/AgencySites/Pages/MERG%20UNAIDS%20ME%20Reference%20Group.aspx

Kindlimuka, the first association established by people living with HIV in Mozambique, provides leadership and mobilizes and distributes resources for HIV prevention, treatment, care and support in affected communities.

Conclusion

Dramatic reduction in the number and rate of new HIV infections is essential to achieving the MDGs. History has shown that dramatic reductions can be achieved. The successful national HIV programmes of the past combined individual-focused biomedical and behavioural interventions with strong and consistent action on the policies, laws and community attitudes that were required to create an enabling environment for individuals to change their behaviour, reduce their risk, and to openly support HIV programmes. Leadership by people living with HIV and active involvement of affected communities in programme design and implementation has been critical to the documented successes.

Over time, national HIV programmes have become bigger, involving more resources and many more players, but often in the process HIV prevention efforts have become fragmented and out of touch with diverse and changing local needs. The combination prevention framework reminds us that successful programmes deal with both individual risk and underlying causes of vulnerability. They require biomedical, behavioural and structural interventions that are specifically selected and tailored to suit local needs – as articulated by affected communities. And to succeed, these must be coordinated, efficient, consistent, and inspired by a shared commitment to common goals.

Much of the extraordinary success achieved with treatment scale-up in recent years stems from the rigorous, systematic approach that diverse stakeholders have jointly undertaken to expand diagnostic and treatment services. While HIV prevention is intrinsically more complex and difficult to implement than HIV treatment – and although combination HIV prevention includes

a broader range of service types and components than treatment scale-up – it is nevertheless possible to approach the design and implementation of combination prevention using a similarly rigorous analytical approach that builds the six defining features listed earlier into routine programming methodology.

UNAIDS' experience with Know Your Epidemic/Know Your Response re-programming efforts underscores the feasibility of a more systematic, evidence-informed, milestone-driven approach to prevention design and scale-up —one that enables each nation to design and coordinate the combination prevention programme tailored to its diverse local needs, based on the best available evidence. The evidence base remains incomplete on certain elements of prevention programming, but this should not prevent the application of lessons learned from program experience. Virtually every public health and international development undertaking requires programme planners and practitioners to do their best with incomplete or equivocal evidence.

While the elements of combination prevention are not new, bringing together researchers and implementers of biomedical, behavioural and structural interventions, in dialogue with affected communities and networks of people living with HIV, is energizing, and in many countries, a novel approach. So too is recognizing that structural interventions to create a more enabling environment for HIV programmes – are equal parts of the core business of HIV prevention, along with biomedical and behavioural strategies. Capacities must be built and resources sustained to implement the combinations consistently, and to learn continuously. Synergies must not only be harnessed between different prevention strategies but also between HIV prevention and treatment. To capture the potential of combination prevention, key stakeholders , in particular young people, people living with HIV, and key populations most at risk, need to be engaged in the design and prioritization, and need to take more strategic, better coordinated and documented, joint action, not just for a year or one national HIV strategic planning cycle, but until they reach and sustains the ultimate goal (UNAIDS, 2010b) of *Zero new HIV infections, Zero discrimination and Zero HIV related deaths*.

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