An analytical framework to help prioritize health system strengthening activities required to reach people who inject drugs, men who have sex with men, and other most at risk populations

Recognizing that there is no single prescription for a multitude of diverse HIV epidemics around the world, UNAIDS led a rally “Know your epidemic, know your response” focusing on the importance of designing evidence-driven strategies based on the analysis of sources of transmission of HIV and evidence of effectiveness of interventions for preventing HIV and treating AIDS. This study, led by the AIDSTAR-Two Project, is a response to that rally and focuses on understanding the epidemics in Vietnam and Jamaica, identifying the most critical interventions, and in turn, identifying the health system strengthening actions that would best improve health system performance. One specific deliverable was the identification of where the next dollar of investment in health systems strengthening should be spent to ensure greatest return from HIV/AIDS programs.

The need and the challenge

The sobering reality is that for every Person Living with HIV placed on treatment, there are four to five new HIV infections. Just like most other countries, this pattern is also true for Vietnam and Jamaica, which have concentrated epidemics driven by people who inject drugs (PWIDs), men who have sex with men (MSM), commercial sex workers and other most-at-risk populations (MARPs). The binding constraint to progress is not necessarily lack of money or lack of effective interventions but weak health systems which are unable to deliver cost-effective interventions to the right populations at the right time, right place and at the right coverage level. There is a tremendous need to orient and sensitize health system strengthening experts and program managers on how they can identify the greatest return on investment for each dollar spent on system strengthening to achieve and sustain HIV/AIDS program goals - but how do you determine where money in health system strengthening should be spent?

The PEPFAR Health Systems Strengthening (HSS) Technical Working Group asked AIDSTAR-Two, an organizational capacity building project funded by the USAID Office of HIV/AIDS, to develop an innovative approach to understanding the health system requirements for achieving a rapid reduction in HIV incidence in MARPs in Vietnam and Jamaica. The approach developed by AIDSTAR-Two closely followed the “know your epidemic” rally of UNAIDS. It demonstrated how to identify the best health system strengthening recommendations based on an understanding of the epidemic and the health system bottlenecks that inhibit the delivery of the most cost effective interventions from being

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delivered at scale to the right population groups. Importantly, it also demonstrated how to make a causal link between health system strengthening and a desired health outcome.

**Maximizing impact with limited resources**

Human and financial resources are severely constrained in Vietnam and Jamaica and in most developing countries. It is true that the level of health status, degree of risk protection, and extent of client satisfaction depends on what is affordable; however, evidence shows that some investments lead to greater health gains than others. How do you identify those investments? The method designed and implemented by AIDSTAR-Two is an analytic process which ultimately leads to how to best allocate scarce resources for the greatest impact on the HIV epidemic. The methodology is guided by the “principle of the vital few” otherwise known as the 80/20 principle or the “Pareto Principle.” The study’s authors use this principle to identify the “vital few” causes and associated risk factors driving HIV transmission, the populations at greatest risk of being infected or of infecting others, the most significant health system bottlenecks and the most important health system strengthening actions to overcome those bottlenecks. By focusing on the “vital few,” the study not only defines a critical path to reducing HIV transmission in Jamaica and Vietnam but justifies investments in health system strengthening which are directly tied to the health outcomes that are to be achieved.

**Identifying “best buys” in health system strengthening: Causal pathway analysis**

“Causal Pathway Analysis,” the AIDSTAR-Two approach, demonstrates how weak health systems result in poor health outcomes and also helps to identify the changes necessary to improve system performance. The ultimate outcome is a clearly defined causal link between recommended health system changes and the desired health outcomes; in this case, reductions in HIV transmission. Tracing the causal pathway to reducing HIV transmission in MARPs requires a six-step process:

1. Understand the direct and underlying causes of HIV transmission, the distribution of prevalent and incident cases and the most effective points of intervention.
2. Identify characteristics of the population(s) most at risk and their risk factors which drive transmission.
3. Identify the most cost effective, evidence-based preventive and curative interventions and current and required coverage levels in at risk populations.
4. Determine the health system requirements for delivering those vital interventions and the system bottlenecks that negatively affect their delivery at scale.
5. Identify the health system strengthening actions needed to improve health system performance specific to bottlenecks identified in step #4.
6. Identify the most appropriate indicators that could be used to measure progress.

By understanding the epidemiology of HIV transmission and system requirements for the most effective interventions......

![Causal Pathway Diagram]

...we can strengthen health systems to reduce HIV transmission

**Right inputs & processes**

**More outputs through improved system performance**

**Higher coverage**

**Outcomes, impact achieved**

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2 Know your Epidemic, Know your System, Know your Response
Improving health system performance: understanding “health system frameworks”

When talking about health systems, most people refer to and use the six health system building blocks described by the World Health Organization (WHO). Each system element is examined independently without examination of how these parts interact, contribute to system outcomes, or why one particular system may perform better than another. In the AIDSTAR-Two methodology, the WHO building block framework was appropriate for describing the health system but not for understanding how it functions.

Additionally, the WHO Health System framework does not make explicit the role of communities in supporting the delivery of health services and ensuring equitable access to these services for all who need them. It does not take into account the critical challenges of stigma and discrimination within health systems and communities, a key barrier to accessing health services, especially for MARPs. The critical role that communities play in providing health services in the absence of, or in partnership with, government services, as well as providing care and support to community members, has been increasingly recognized. As a result, the Global Fund, in collaboration with other stakeholders, developed the “Community Systems Strengthening Framework,” (2010) which highlights six key elements that need to be in place for health and community systems to function well:

1. Preparing community-based organizations to contribute to national responses on HIV, tuberculosis and malaria
2. Building the organizational capacity of community organizations
3. Building human and technical capacity for community-based service delivery
4. Establishing and strengthening networks and partnerships
5. Establishing sustainable financing
6. Creating and maintaining an enabling environment

The health system strengthening framework used in the AIDSTAR-Two study was a combination of analytic and explanatory models informed by the Community Systems Strengthening Framework. It sought to understand not just the causes of HIV transmission but also the causes and determinants of system performance which are amenable to policy change. Once the causes were understood – the risk factors and populations driving HIV transmission and the system bottlenecks for high coverage of a critical few interventions – it could then be determined which system changes could bring about rapid improvements in system performance. This process is based on analytic work which suggests that there are five factors that affect system performance. The Harvard School of Public Health describes these five factors as “policy control knobs.”  

“The best measure of a health system’s performance is its impact on health outcomes.”

Margaret Chan, WHO
Everybody’s Business 2007

Distribution, organization, efficiency, quality and the availability of services.

Financing: Interventions which determine the amount of funds available for services, the agency or agencies with control of those resources, the mechanism of resource allocation to

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2 Inside the Black Box of Health Systems: What Are the Policy Control Knobs? William C. Hsiao K.T. Li Professor of Economics and Health Policy Harvard University School of Public Health.
various governmental and nongovernmental agencies, groups which have access to health care and the means by which risks are pooled through insurance and other means.

- **Incentives and payment**: Interventions which alter the incentive structure on both the supply and demand side, including interventions that influence rewards and risks for providers, managers and consumers. This may also include the use of financial and other incentives to encourage proper behavior, alter demand and improve care seeking behavior in high risk populations.

- **Regulation**: The creation, amendment or deletion of laws, policies, rules and regulations that correct market failures, improve provider performance or reduce inappropriate practices. This includes laws, rules and regulations governing the private and NGO sectors, whether and how they can exist, the range of services they can provide and the method of payment for services rendered.

- **Influencing beliefs, preferences and demand**: The use of multiple methods, e.g., media, peer counseling, internet, that influence people’s beliefs and preferences, expectations, lifestyles and behavior as well as the behavior of providers.

**Selected findings and recommendations: Vietnam**

In Vietnam, the adult prevalence rate for HIV/AIDS is less than 1%, and the primary direct cause of HIV transmission is unprotected casual and transactional sex and the sharing of HIV infected injecting equipment in the case of PWIDs. Indirect causes include informal sex work, lack of access to and demand for condoms, clean needles and syringes, and a heavy reliance on the formal, public health system for services. Stigma and discrimination affect the demand and supply of key interventions, primarily by affecting either demand for services or the supply (provision) of appropriate services.

**Populations most at risk**

A complex web of transmission among PWIDs, MSM and commercial sex workers results in new infections among MARPs. MARP to non-MARP transmission is high, resulting in more new infections in non-MARPs than MARPs (see figure 1 on the following page). New infections are driven predominantly by sub populations of MARPs, e.g., low income, non venue-based sex workers who live and work in a few urban centers.
Cost effective, evidence based interventions

Data on the cost effectiveness of interventions is limited. Nevertheless, evidence suggests that some interventions are more cost effective than others and operate against different causes and risk factors along the causal pathway. Condoms and lubricants are the most cost effective interventions for averting almost all sexually transmitted infections while clean needles and syringes reduce infections in PWID populations. Indirect causes can be addressed by peer-to-peer counseling, improving demand, engaging non public sector providers and changing the incentive structure which affects supply and demand for interventions. Antiretroviral treatment is an effective preventive intervention but very costly.

The resulting technical strategy requires a dual approach. First, place as many HIV+ people on treatment as rapidly as possible while at the same time quickly lowering the number of new infections through prevention. Second, rapidly reduce HIV transmission among those most likely to transmit the virus or be infected and those located in high risk geographic settings. This can be done through scaled up delivery of (and demand for) a few critical interventions: condoms, lubricants, clean needles and syringes, and opiate substitution therapy as well as efforts to increase demand for these interventions.

Health system requirements and bottlenecks

Few of these interventions are reaching high coverage levels in critical populations and geographic areas and some approaches, e.g., community based delivery, are not supported by policy. Financial resources are spread thinly across effective and less effective interventions and across high and low priority areas. Some delivery approaches, e.g., public sector delivery of needles and syringes, are ineffective at reaching target populations and are costly. Likely reductions in financing mean greater attention is needed to funding cost effective interventions and targeting specific populations and geographic areas. Incentives can be better aligned to improve both the supply of and demand for critical interventions in target areas and priority populations.
**Recommended health system strengthening actions to overcome bottlenecks**

Following the control knob framework, the following are some of AIDSTAR-Two’s recommendations. The goal could be broadened to focus on both prevention and treatment with the end result being declining prevalence as well as incidence of new cases.

- **Financing:** Improve targeting of available resources as donor funding declines. Place priority on specific geographic areas and sub populations of MARPs, emphasizing both treatment and prevention. Adequately finance a few key preventive and curative interventions. Develop lower cost approaches to maintaining HIV+ people on treatment.

- **Incentives and payment:** Align the financial incentives to boost both the supply of and demand for critical interventions. Maintain the National Target Program influence and standards by allocating funds to high priority geographic areas on a conditional basis. Consider demand side subsidies to promote demand and performance contracts to stimulate better supply side performance and enhance uptake by MARP groups.

- **Delivery:** New, cheaper and more sustainable approaches for long term delivery of these interventions, including antiretroviral treatments (ARTs), will be required which will entail community level interventions, civil society engagement and greater demand. Maintain public provision of curative services but expand preventive services. Expand the role of private, NGO and community level providers for both treatment and prevention, perhaps using performance contracts. Focus on MARPs and well as high risk non-MARP groups in target geographic areas. Scale up delivery of the most critical interventions in high priority geographic areas and populations before focusing on the general population.

- **Regulation:** Change policies and regulations to allow greater involvement of non-public sector providers in prevention and treatment. Reduce or eliminate policies that negatively affect supply and demand such as policies on the use of detention centers and free for all pricing policies for key commodities in the private sector.

- **Influencing beliefs, preferences and demand:** Employ community based groups, peer educators and MARP groups more aggressively in targeted efforts to reach and motivate MARPs to be tested, treated, adopt safe practices and sustained on appropriate treatment regimes.

**Selected findings and recommendations: Jamaica**

In Jamaica, the adult prevalence rate for HIV/AIDS is 1.7%. There has been a slight increase from 1.5% over the past decade. Although the epidemic is generalized, it is also concentrated among some sub-populations, including men who have sex with men (a 31.8% prevalence rate) and sex workers (5%), the two most-at-risk populations. The assessment determined that the greatest impact on the epidemic in Jamaica will be achieved by focusing on the following sub populations and interventions:

- Younger less educated (possibly homeless) MSM who are the receptive partners in what could be termed transactional sex in the areas of Kingston, Montego Bay and Ochos Rios, focusing on consistent condom use for anal sex through condom promotion, marketing and peer support.
- Younger women engaging in non formal sex work (and using drugs) and their partners in the parishes of Kingston, St. Catherine, St. Ann and St. James, focusing on consistent condom use via condom marketing and peer support.
While current health system analysis approaches offer good input into broad health system strengthening needs at a national level, a much more specific, detailed and analytic approach to health system analysis which is focused on identifying specific system bottlenecks for specific interventions targeted at the needs of specific populations is required to scale up evidence-based interventions.

**Recommended health system strengthening actions to overcome bottlenecks**

Using the control knob framework, the following are some of AIDSTAR-Two’s recommendations:

- **Financing:** Improve targeting of available resources as donor funding declines. Place priority on specific geographic areas and sub populations of MARPs, emphasizing both treatment and prevention. Adequately finance a few key preventive and curative interventions. Develop lower cost approaches to maintaining HIV+ people on treatment.

- **Incentives and payment:** Align the financial incentives to boost both the supply of and demand for critical interventions. Provide subsidies for condoms and lubricants, allowing them to be provided free of charge or within target populations’ ability to pay. Improve the allocation of available resources to adequately fund programs for MSM and sex workers and give priority to high risk geographic areas.

- **Delivery:** New, cheaper and more sustainable approaches for long term delivery of these interventions, including ARTs, will be required which will entail community level interventions, civil society engagement and greater demand. Increase the number of MSM and young female friendly services/access sites. Expand the number of service providers focusing on delivering condoms and lubricants to target populations and geographic areas.

- **Regulation:** Change policies and regulations to allow greater involvement of non-public sector providers in prevention and treatment. The Offenses against the Persons Act needs to be amended to reduce stigma and discrimination. Encourage government policy/legislation supporting interventions for MARPs. Amend laws which would allow for the provision of reproductive health services to girls and boys who are sexually active.

- **Influencing beliefs, preferences and demand:** Employ community based groups, peer educators and MARPs groups more aggressively in targeted efforts to reach and motivate MARPs to be tested, treated, adopt safe practices and sustained on appropriate treatment regimes.

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