



Optimizing Viet Nam's HIV Response:

An Investment Case

October, 2014

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Executive Summary

- There has been great progress against Viet Nam's epidemic, but HIV remains a formidable challenge -- AIDS is still among the top causes of premature death.
- Donor funds are shrinking. If bold decisions are not made soon to increase domestic funding, Viet Nam will face a resurgence in HIV infections and AIDS deaths, and very high future resource needs. A gradual, predictable, and responsible transition from donor to domestic funding is required.
- Viet Nam is working toward Ending AIDS by 2030: this means reducing HIV incidence and AIDS-related deaths to levels that no longer represent a major health threat to any population.
- The Investment Case identifies priorities and solutions to increase the effectiveness, efficiency and sustainability of the national response to HIV.
- Priorities:
 1. Bring to scale evidence-based and comprehensive harm reduction for key populations
 2. Scale up HIV testing and treatment, including immediate treatment for key populations
 3. Focus resources on key populations in high-burden areas
 4. Sustainable financing, including increasing the state budget and the role of health insurance
 5. Integration and decentralization of HIV service delivery systems, including health systems strengthening
 6. Sufficient supply of ARV drugs, methadone, reagents and other commodities for the HIV response
- Adopting the above set of priorities and undertaking concrete actions to achieve them can put Viet Nam on course to "Ending AIDS by 2030".

I. Introduction

The response to HIV in Viet Nam is at a crossroads. Over the past 25 years, significant progress has been made in preventing new infections, reducing AIDS-related deaths, and gradually scaling up harm reduction interventions and treatment and care in high-burden provinces. These achievements have been made through the combination of strong Government leadership across multiple sectors, the participation of affected communities and civil society, and an effective collaboration between the Government of Viet Nam and international development partners.

However, Viet Nam is facing formidable challenges in sustaining the national response to HIV. International donor contributions are shrinking, while domestic resources remain limited. The accumulated number of HIV infections and AIDS-related deaths continue to increase. HIV transmission has new and complex dynamic that make it more difficult for intervention. Stigma and discrimination related to HIV remain significant barriers to service uptake, and program coverage is still limited. Instead of continued progress against the epidemic, there is a real danger of losing hard-fought gains if Viet Nam does not significantly increase domestic investment for HIV in the coming years.

Despite these challenges, Viet Nam aims to achieve the ambitious targets in the National Strategy on HIV/AIDS Prevention and Control in Viet Nam till 2020 with a vision to 2030, which are consistent with the global targets set out in the Political Declaration of the United Nations General Assembly Special Session of 2011. Viet Nam also supports the new treatment target “90-90-90 by 2020” (90% of all people living with HIV will know their HIV status; 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy; and 90% of all people receiving antiretroviral therapy will have durable viral suppression), and the global goal of “Ending AIDS by 2030”.¹

In light of both Viet Nam’s ambitious goals for its response and the serious challenges remaining, the Ministry of Health’s Viet Nam Administration for HIV/AIDS Control (VAAC) has developed an HIV Investment Case in consultation with development partners and other stakeholders. The Investment Case analyses Viet Nam’s HIV epidemic and response, examines the impact and implications of various future scenarios, and establishes priorities that aim to make the response more effective, efficient and sustainable, toward the global goal of Ending AIDS by 2030.

1. This means reducing HIV incidence and AIDS-related deaths to levels that no longer represent a major health threat to any population.

II. Methodology

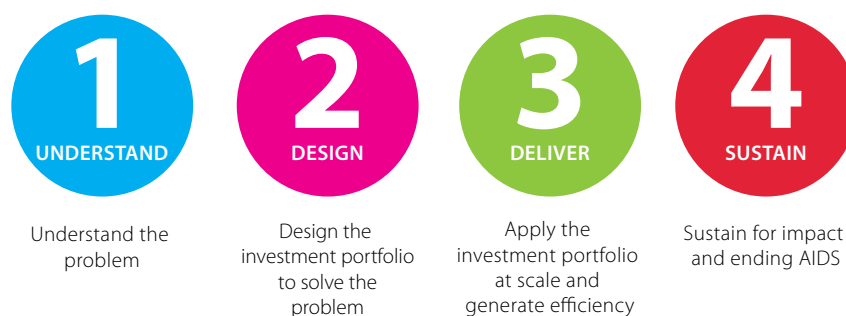
The Investment Approach

Despite impressive progress across the world, the global HIV response is falling short. In the context of decreasing donor resources for HIV, it has become increasingly clear that global investment in HIV must be more effective, more efficient, and sustainable over the long term.²

The “investment approach” provides a way to make this happen. In 2011, a group of stakeholders³ responded to the above concerns by elaborating an “investment framework” for national responses to HIV.⁴ This new approach promotes targeted investment and better priority-setting based on a nuanced understanding of epidemics, combined with interventions that have been proven to work. It relies on the idea that more effective investment is in itself more efficient – in part because it offers “value for money” – and is also offset by gains in terms of the HIV response and by other economic and social gains. In addition, savings will be made over time due to economies of scale and more efficient service provision. The investment approach is based on human rights and universal, equitable service provision, and addresses the stigma and discrimination that serve as barriers to equitable service provision. It is also premised on inclusion, participation, informed consent and accountability.

Development of Viet Nam’s Investment Case for HIV

Investment Cases prioritize high-impact strategies, and tailor HIV investment to national contexts. This makes investment cost-effective and efficient and ensures that it results in the maximum benefits by basing programming and resource allocation on the best available evidence. UNAIDS promotes a four-step process to support the planning of enhanced investment:⁵



2. Joint United Nations Programme on HIV/AIDS (UNAIDS). *Smart Investments*. 2013.

3. Joint United Nations Programme on HIV/AIDS (UNAIDS); Futures Institute, School of Public Health and Imperial College Business School, Imperial College London; The Global Fund to Fight AIDS, Tuberculosis and Malaria; International Treatment Preparedness Coalition; International Clinical Research Center, Department of Global Health, University of Washington; National AIDS Programme, Brazil; Office of the US Global AIDS Coordinator, US President’s Emergency Plan for AIDS Relief; The Bill & Melinda Gates Foundation; UNICEF; Strategic Health Programmes, Department of Health, South Africa; Global HIV/AIDS Unit, Health, Nutrition, and Population, The World Bank; World Health Organization; Institute of Tropical Medicine, Belgium; US Centers for Disease Control and Prevention; International AIDS Society; Family Health International, Great Lakes University of Kisumu; National AIDS Control Council, Kenya; Center for Global Development; The Clinton Foundation.

4. Schwartländer, Bernhard et al. *Towards an improved investment approach for an effective response to HIV/AIDS*. The Lancet, Volume 377, Issue 9782. 2011.

5. Joint United Nations Programme on HIV/AIDS (UNAIDS). *Investing for results. Results for people. A people-centred investment tool towards ending AIDS*. 2012.

The steps identify the people who must be reached, and the basic programmes to reach them, as well as the critical social and programme enablers that are indispensable to making the programmes work effectively.

This process, which is based on country-level evidence and the global understanding of those interventions that have the highest impact, results in a concrete strategy – an Investment Case – to address the most urgent aspects of country-level HIV epidemics effectively, and to ensure that the response to HIV is both efficient and sustainable.

The process of developing Viet Nam's Investment Case was led by the Ministry of Health (Viet Nam Administration for HIV/AIDS Control) starting in April 2014, with collaboration from relevant Government sectors, development partners and civil society. A Steering Committee, composed of representatives of the Ministry of Health, the Viet Nam Union of Science and Technology Associations (VUSTA) and international stakeholders, and a Technical Working Group (see Annex 1 for the list of participants in each group) were established to ensure appropriate levels of technical participation and policy guidance. Inputs were sought from civil society representatives from across the country, including representatives of networks of people living with HIV (PLHIV), people who inject drugs (PWID), female sex workers (FSW) and men who have sex with men (MSM). The consultative process included a meeting to share the draft Investment Case with Government ministries, international partners and civil society.

The analytic work for the Investment Case began with the review and analysis of national and international qualitative and quantitative evidence, as well as global best practice for effective interventions. This included Viet Nam's substantial, recent and rigorous epidemiological and response data, including: National AIDS Spending Assessments (NASA); Integrated Biological and Behavioural Surveys (IBBS); HIV Sentinel Surveillance (HSS) and HSS with a behavioural component (HSS+); national HIV estimations and projections; programme coverage data for high-impact interventions; project and programme evaluations; and other special studies (see Annex 2 for a full list of sources).

Much of the above data were used as inputs for an AIDS Epidemic Model (AEM) exercise.⁶ The AEM uses existing data to provide a picture of an epidemic and enables policymakers to estimate the future impact of proposed policies and programme coverage levels, as well as the size of investment required. The Technical Working Group was responsible for collecting and inputting existing epidemiological, behavioural and programme data and the estimated unit costs of existing interventions. Three workshops were held by the Technical Working Group to develop, validate and analyse a baseline model and a set of scenarios for the response (see Annex 3 for a more detailed description of the modelling exercise and unit cost estimations, including the assumptions used and limitations of the model).

In addition to the AEM, the Technical Working Group reviewed the available evidence, coordinated inputs from stakeholders, and relayed analysis and recommendations to the Steering Committee. Senior VAAC leaders chaired two consultations with civil society in the north and south of Viet Nam in order to obtain feedback from PLHIV, PWID, FSW and MSM, as well as people working on HIV in community-based organizations. Input was sought on their priorities for the response in future, including the best ways to ensure that PLHIV and key populations at risk can access the prevention and treatment services they need. The Technical Working Group also contributed to the final analysis of the AEM.

The Steering Committee used the evidence and recommendations provided by the Technical Working Group and civil society to make the final selection of elements and scenarios for Viet Nam's Investment Case. The resulting decisions

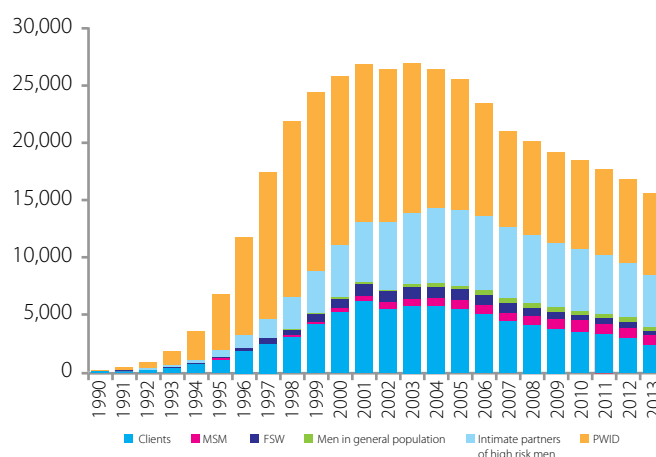
6. For more information on the AIDS Epidemic Model, see: Nalyn Siripong, Wiwat Peerapatanapokin, Robert Puckett and Tim Brown. *Assessing HIV Program Impacts with the AIDS Epidemic Model (AEM). A Tutorial Introduction to the AEM Suite of Tools and Workbooks*. East-West Center Research Program. 21 August 2013.

and priorities are focused on interventions that would achieve the greatest impacts on the HIV response, and on measures to both reduce costs and increase efficiency in order to ensure the sustainability of these interventions.

III. Viet Nam's response to HIV: progress and challenges

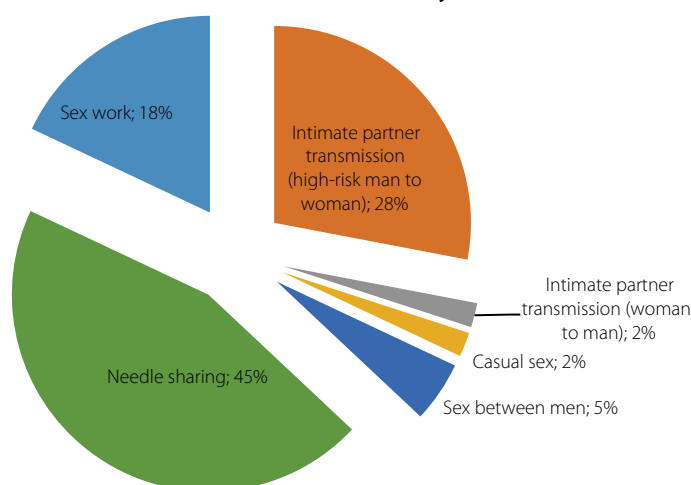
According to 2013 estimations and projections, in 2014 there are an estimated 256,000 people living with HIV (PLHIV) in Viet Nam.⁷ The epidemic is concentrated primarily among PWID, MSM and FSW (see Figure 1). In addition, a substantial proportion of all new infections are occurring within intimate partner relationships.⁸ Indeed, in 2013 the greatest number of new infections occurred among men who share needles while injecting drugs and between high-risk men and their long-term female sexual partners; 45% and 28% respectively (see Figure 2).⁹

Figure 1: Annual New HIV Infections: by Risk Population, 1990-2020



Source: Viet Nam AEM, 2014.

Figure 2: New HIV infections in 2013 by mode of transmission



Source: Viet Nam AEM, 2014.

7. EPP Technical Working Group, Ministry of Health. *Preliminary results of HIV estimations and projections in Viet Nam 2013*. 2013.

8. The term 'HIV transmission in intimate partner relationships' is used to describe the transmission of HIV to women from their long-term male partners who inject drugs, have sex with other men or are clients of sex workers. (UNAIDS, 2009)

9. VAAC. Viet Nam AIDS Epidemic Model. 2014.

In 2013, average HIV prevalence among PWID was 10.3%; among FSW it was 2.6%; and among MSM it was 3.7%.¹⁰ These populations are mostly concentrated in large urban centres and mountainous Northern provinces. HIV prevalence varies among areas. For example, HIV prevalence among MSM in Ha Noi and Ho Chi Minh City is estimated to be up to 16%¹¹ but is only under 2% in other provinces.¹²

Successes

The response to Viet Nam's HIV epidemic has been prioritized through the establishment of a National Committee of senior leaders of relevant ministries and mass organizations who meet regularly under the leadership of a Deputy Prime Minister to guide policymaking and oversee implementation of the national HIV strategy. Directive 54 of the Party's Central Committee Secretariat on Strengthening Leadership on HIV/AIDS and the Law on HIV/AIDS Prevention and Control serve as legal and policy foundations for the multisectoral delivery of HIV services and the protection of the rights of PLHIV. Based on this foundation, the National Strategy on HIV/AIDS Prevention and Control till 2020 with a vision to 2030, the 2012-2015 National Target Programme on HIV/AIDS Prevention and Control, and a comprehensive set of implementing decrees and technical guidelines have been established. Under the direction of the National Committee and with the support of the international community, VAAC guides Provincial AIDS Centres and works with related sectors and organizations to coordinate and implement the national HIV programme from central to local level.

Under this strong and consistent leadership, Viet Nam has achieved important successes against the epidemic. The number of new infections reported to the Ministry of Health decreased rapidly between 2007 and 2009, and has stabilized at around 14,000 per year since 2010.¹³ There has been a significant decline in HIV prevalence among PWID thanks in large part to targeted harm-reduction interventions.¹⁴ By the end of 2013, the percentage of PWID among those surveyed and who reported using sterile injecting equipment the last time they injected was 97.3%. In addition, the methadone maintenance therapy (MMT) programme had been expanded to 92 sites in 32 provinces serving 18,000 PWID.¹⁵

New infections among FSW and their clients have also declined due to condom use and treatment of sexually transmitted infections. Nearly 73% of FSW reported having received free condoms in the last month, and 92% said they used a condom with their most recent client.¹⁶ An evaluation of the scale up of Viet Nam's harm reduction interventions from 2004 to 2009 estimated that between 2% and 56% of potential infections among PWID and FSW were averted by syringe and condom distribution, depending on the level of programme coverage achieved.¹⁷ Behaviour change communication and condom and lubricant distribution targeting MSM have also been rolled out in recent years. In 2013, over 66% of MSM surveyed reported the use of a condom the last time they had anal sex with a male partner, and 41.2% of PWID reported the use of a condom at last sexual intercourse.¹⁸

Prevention of mother-to-child transmission (PMTCT) services have also improved: in 2013, HIV testing coverage for pregnant women rose to 49.7%, while of an estimated

10. 2013 HIV sentinel surveillance (HSS). In: Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

11. Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

12. EPP Technical Working Group, Ministry of Health. *Preliminary results of the HIV Estimates and Projection in Viet Nam 2013*. 2013. In: Viet Nam

13. Case reports as reported in: Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014

14. Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

15. Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

16. HIV sentinel surveillance with a behavioural component (HSS+) and Integrated Biological and Behavioural Surveys (IBBS), 2013. In: Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

17. Viet Nam Administration of AIDS Control (VAAC). *Evaluation of the epidemiological impact of harm reduction programs on HIV in Vietnam*. 2011.

18. HIV sentinel surveillance with a behavioural component (HSS+) and Integrated Biological and Behavioural Surveys (IBBS), 2013. In: Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

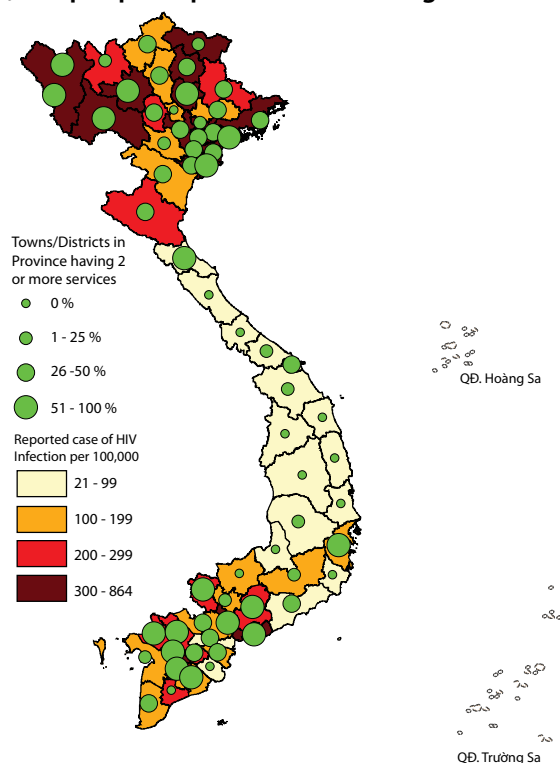
2,981 pregnant women diagnosed as HIV-positive during pregnancy, 1,648 mothers and 1,758 infants received ART for PMTCT. Early infant diagnosis coverage increased to 68%.¹⁹ Finally, AIDS-related morbidity and mortality have been reduced through the scale-up of testing, treatment and care services for PLHIV, which brought antiretroviral treatment (ART) coverage to 68% of those eligible in 2013.^{20 21}

AIDS-related morbidity and mortality have decreased thanks to the scale-up of testing, treatment and care of PLHIV. By end of 2013, the ART programme has reached 67.7% of all PLHIV eligible for treatment.

Challenges

Despite these considerable achievements, HIV remains a formidable challenge for Viet Nam. HIV and AIDS constitute a major public health problem, ranking among the top contributors to the national burden of disease, and AIDS is still among the top causes of premature death. There are new and complex transmission dynamics which challenge the response. For example, HIV infections are increasing in remote and mountainous areas, where socio-economic development is not as advanced as in urban areas, people's understanding of HIV and AIDS is limited, transportation is difficult and there is a lack of access to HIV services.

Figure 3: Number of reported HIV cases per 100,000 people reported and coverage of services



Source: US Centers for Disease Control (CDC).
Situation Analysis DRAFT, 2014

Harm-reduction intervention coverage for key populations is still far below the level required to contain the epidemic: according to 2013 HSS+ data, needle and syringe programme coverage is only 29%, while MMT service coverage is only 15% of the need. Similarly, the percentage of FSW who have received free condoms and know where they can be tested is 51%, and of MSM is only 42%.²²

Investment in HIV prevention has not been sufficiently targeted. According to the most recent expenditure analysis, 19.8% of HIV prevention expenditure in 2011 and 2012 went to programmes targeting PWID, 10.5% of expenditure was targeted at FSW and 1.4% targeted MSM,²³ although these population groups accounted for an estimated 54% of new infections in 2013.²⁴

Critically, 28% of new infections occur among a population that receives precious little attention: women who are in long-term sexual relationships with men who are living with HIV, particularly men who have injected drugs, but also men who have sex with men and/or are clients of sex workers.²⁵ Nearly three-quarters of new infections occur between PWID who share needles, and from PWID to their spouses or regular sexual partners through

19. VAAC D28 Routine report. In: Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.
20. The current eligibility threshold for ART is CD4 <350/mm3.
21. VAAC D28 Routine report. In: Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.
22. *HIV Sentinel Surveillance with behavioural component (HSS+)*. 2013.
23. Viet Nam Administration of AIDS Control (VAAC). *National AIDS Spending Assessment 2013*. 2013.
24. AIDS Epidemic Model. PWID: 46%, MSM: 6%, FSW: 2%
25. Joint United Nations Programme on HIV/AIDS (UNAIDS) and United Nations Entity for Gender Equality and the Empowerment of Women (UN Women). *Measuring Intimate Partner Transmission of HIV in Viet Nam: A Data Triangulation Exercise*. 2012.

intimate partner transmission (IPT). Indeed, it has been estimated that nearly 54% of infections among all women can be solely attributed to the risk behaviour(s) of their male sexual partners.²⁶ There is evidence that inconsistent condom use among men who inject drugs could be driving IPT, and that where the woman does not know her male partner's serostatus, condom use is particularly inconsistent.²⁷ However, IPT has received limited attention and investment in prevention efforts to date.

Service coverage, HIV prevalence, new infections and the presence of key populations vary widely across the country. As Figure 3 shows, the coverage of services (ART at outpatient clinics, needle and syringe provision, condom provision and MMT) does not always match the distribution of reported HIV cases per 100,000 people. This means that people in some areas of high need are not being adequately served. The discrepancy between need and coverage is particularly acute in northern mountainous areas with large numbers of PWID, where lack of coverage is compounded by problems of access due to physical barriers and poverty.

Stigma and discrimination are also significant barriers to the uptake of HIV services across Viet Nam. Confidentiality concerns are particularly challenging. In a 2011 survey, nearly 30% of PLHIV said that their serostatus had been disclosed without their consent.²⁸

Listening to affected people: Stigma and discrimination

Stigma and discrimination are serious problems for PLHIV and people at higher risk of HIV: the majority of the 1,642 PLHIV surveyed for the 2011 Stigma Index study said that their right to live free of discrimination had been violated.²⁹

PLHIV and key population leaders at consultation meetings for the Investment Case were also vocal about the challenges they face. Not only is being HIV-positive stigmatized, but so are risk behaviours. If people's HIV status or risk behaviours are known, they may not only be ostracized by their friends and families, but also denied educational and employment opportunities.³⁰

The understandable fear of disclosure and stigma and discrimination is a major barrier to accessing services, including harm-reduction services, but in particular regular testing and early initiation of treatment.

Perceptions about a general lack of confidentiality and fear of stigma and discrimination make many people at high risk of HIV infection very afraid to learn their HIV status. As a result the uptake of testing is still low (see Figure 4), and people being diagnosed are still starting treatment very late. Poor linkages among various HIV services aggravate this problem. As Figure 5 demonstrates, at each stage of the cascade of HIV diagnosis, care and treatment services, fewer and fewer people benefit from services.

26. Joint United Nations Programme on HIV/AIDS (UNAIDS) and United Nations Entity for Gender Equality and the Empowerment of Women (UN Women). *Measuring Intimate Partner Transmission of HIV in Viet Nam: A Data Triangulation Exercise*. 2012.

27. Joint United Nations Programme on HIV/AIDS (UNAIDS) and United Nations Entity for Gender Equality and the Empowerment of Women (UN Women). *Measuring Intimate Partner Transmission of HIV in Viet Nam: A Data Triangulation Exercise*. 2012.

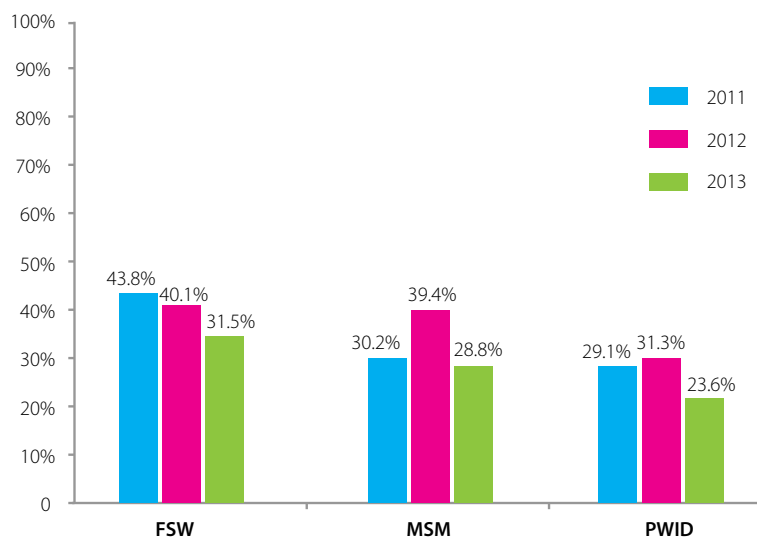
28. Viet Nam Network of People Living with HIV (VNP+). *Viet Nam Stigma Index*. 2012

29. Viet Nam Network of People Living with HIV (VNP+). *Viet Nam Stigma Index*. 2012

30. Viet Nam Network of People Living with HIV (VNP+). *Viet Nam Stigma Index*. 2012

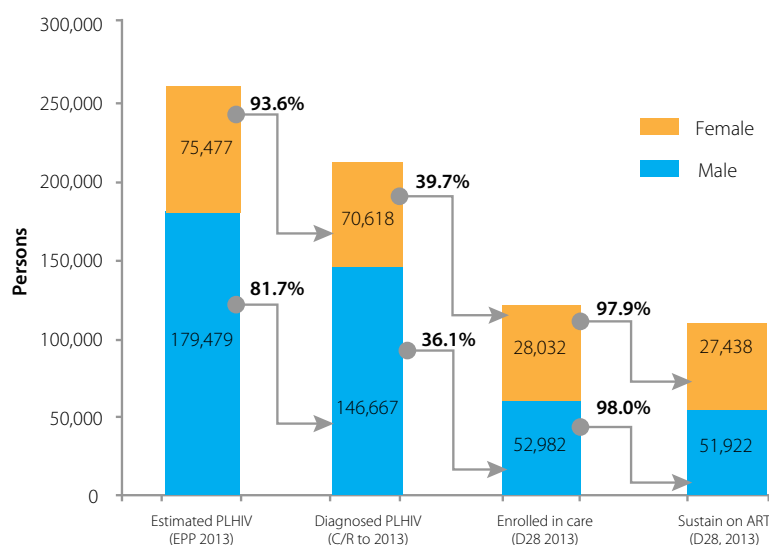
This means that the preventive benefits of treatment are being lost. There is substantial global evidence that early initiation of ART not only keeps PLHIV healthier and more productive, but also lowers the amount of virus in their blood, reducing the risk of transmission.^{31 32}

Figure 4: Percentage of key populations who were tested for HIV within the past year and know the results



Source: VAAC

Figure 5: Cascade of HIV diagnosis, care and treatment services



Source: FHI360

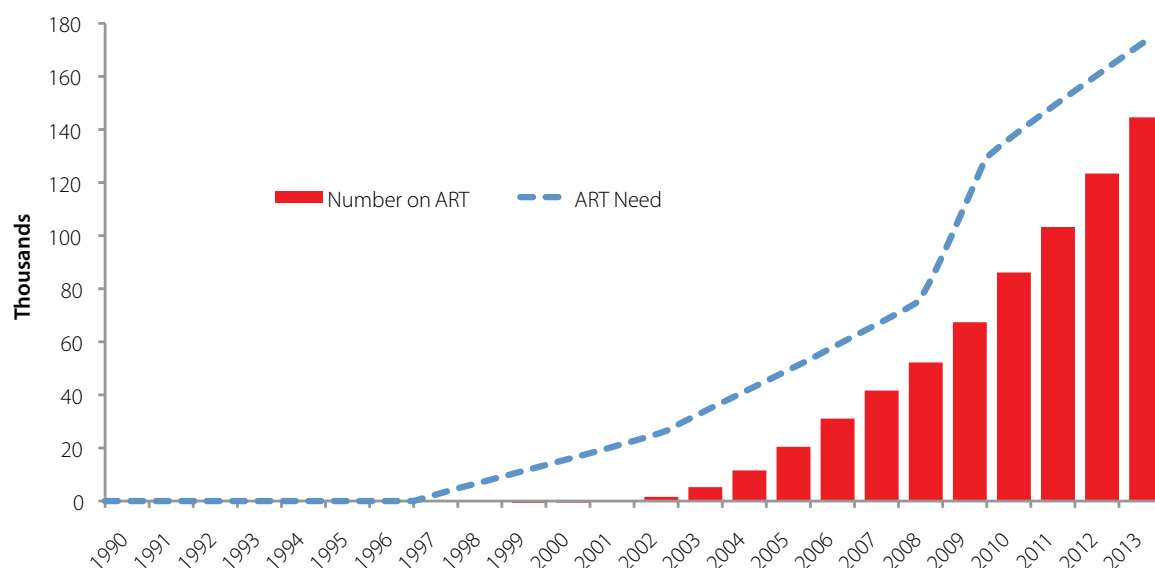
As more people become infected with HIV, efforts to expand access to treatment are struggling to keep pace. There is an increasing gap between ART need and ART coverage (see Figure 6), making the procurement of the necessary antiretroviral (ARV) drugs increasingly challenging, especially since the donors who have historically provided the majority of these commodities are expected to reduce or completely withdraw their support. Similarly, the continued implementation of MMT services will be affected by methadone procurement issues.

31. World Health Organization (WHO). *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: Recommendations for a public health approach*. 2013.

32. World Health Organization (WHO). *Antiretroviral treatment as prevention (TASP) of HIV and TB - Programmatic update*. 2012.

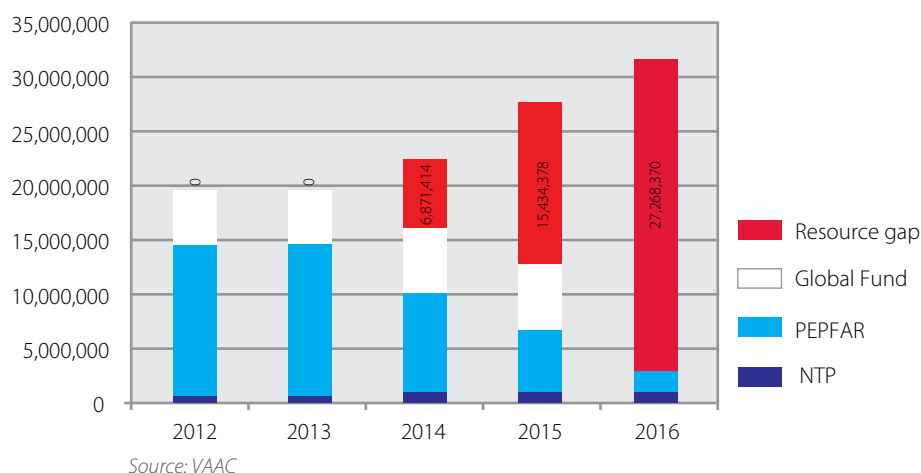
A major barrier to further progress in terms of both prevention and treatment is that HIV services are not well-integrated within the public health care system or coordinated with other services (such as tuberculosis diagnosis and treatment or maternal and child health services). This means that opportunities to reach more people with services and to make services sustainable are being lost, at least in part.

Figure 6: Scale up of ART and increasing number of PLHIV in need



Sources: VAAC ART programme data and analysis, 2014. Viet Nam AEM

Finally, and crucially, the challenge of rapidly declining donor contributions is in itself a major threat to Viet Nam's progress against HIV. The country currently relies on donors for approximately 75% of the funding spent on the HIV response. However, the global recession and Viet Nam's status as a middle-income country have meant that important donors such as the World Bank and the United Kingdom's Department for International Development (DFID) have recently ended their HIV programmes, and Viet Nam's biggest donors for the HIV response – the United States through the President's Emergency Programme for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS, TB and Malaria (the Global Fund) – have indicated that Viet Nam will likely receive increasingly limited support in the coming years. This issue has been recognized by senior Government officials, and in 2013 a Project on Sustainable Financing for HIV/AIDS Prevention and Control Activities in 2013-2020 Period was endorsed by the Prime Minister of the Government. Among the project's objectives is to use domestic resources for 50% of total spending on HIV and AIDS prevention and control by 2015 and for 75% of total spending by 2020. Viet Nam has not been able to confirm the level of investment in HIV for the period 2016-2020. In addition, domestic funding for the National Targeted Programme for HIV was cut by the National Assembly. As a result, it is anticipated that there will be a dramatic widening of Viet Nam's resource gap from \$6.9 million in 2014 to \$27.3 million in 2016 (see Figure 7). This situation presents a major threat to the sustainability of current achievements, and to future progress in preventing new infections and providing treatment for PLHIV.

Figure 7: HIV commitments and funding gap, 2012-2016

At present, the majority of points of service for HIV are largely funded through donor projects, which cover service modalities to medicines, funds for operation and facilities, as well as a significant portion of the human resources costs. Therefore in the future, when HIV services are transitioned to domestic funding, there will be a shortage of both funding and trained staff because the majority of project staff are not part of the formal health human resources system. Furthermore, following the transition from donor to domestic funding, it is unlikely that the health care units in the public health system will be able to easily recruit more staff; at least for the near-future, they will only be able to use existing human resources to cover the additional HIV services. This shortage in trained staff on HIV after transition from donor to domestic funding is a particular worrying challenge.

IV. Scenarios for the future of HIV in Viet Nam

The Technical Working Group of national and international experts used the AEM to develop a detailed picture of Viet Nam's epidemic and to examine the future impact of various scenarios of investment and scale up (see Annex 3 for the full details of this process). The Steering Committee selected the optimal scenario for Viet Nam's epidemic, and used the scenarios to make informed decisions on related policy and programme options.

Generating scenarios for analysis

Four of the total 23 scenarios generated in the AEM exercise modelled a "worst-case" situation showing what will happen if international donors leave too fast and the Government of Viet Nam does not invest additional resources for the HIV response.³³

The remaining 19 of the 23 scenarios generated were grouped into three categories:

1. "Baseline" – this is the model of the current response projected forward. It was used to judge the impact of scaling up individual harm-reduction and treatment interventions.

33. Assumptions: 25.5% FSW receiving condoms and knowing where to get a test, 14.5% PWID served by NSP, 10% of PWID on MMT (assumption: other costs will be covered by PWID), 21% MSM receiving condoms and knowing where to get a test (assumption: a proportion of PWID, MSM and FSW will continue to buy commodities for themselves), and 60% of those eligible at CD4 350 receiving ART.

2. “Halfway to the National Targets” – this is a model of what will happen if the National Targets can only be met halfway (i.e. 50% from the baseline). It was used to gauge the effects of limited investment in the response.
3. “National Targets” – this is a model of the scale-up of interventions to fully achieve the targets within the “National Strategy on HIV/AIDS Prevention and Control to 2020 with a Vision to 2030”. It was used to gauge the effects of greater investment in different combinations of interventions and estimate the resource needs for scale-up. The “National Targets” scenario includes bringing prevention interventions fully to scale.

Saving lives and increasing cost effectiveness

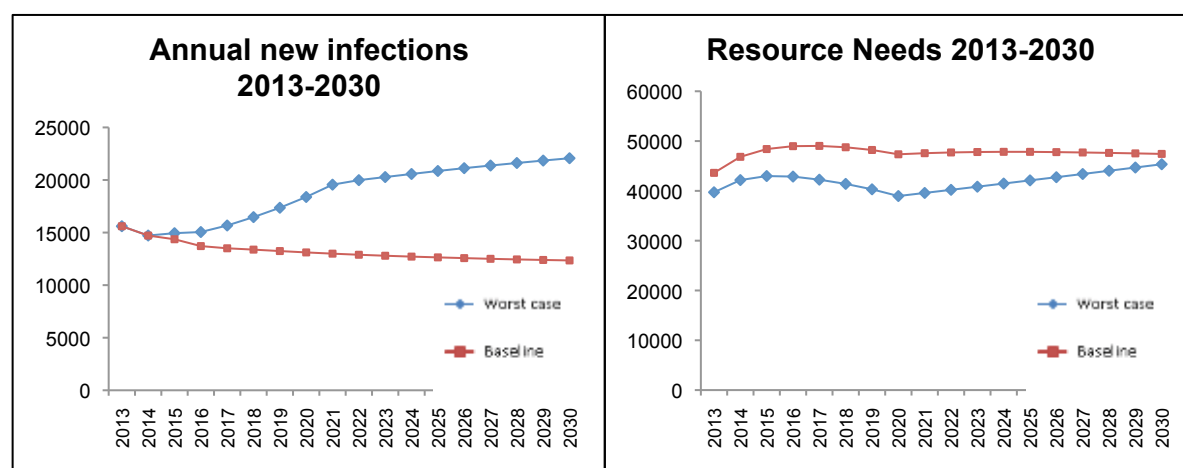
Averting new HIV infections and AIDS-related deaths are the key criteria for success in the response. The AEM analysis measured new infections and deaths averted to 2030 for each AEM scenario, as well as the level of investment required to achieve these gains.

The AEM was also used to calculate the economic benefits gained or lost under each scenario. This was measured in disability-adjusted life years (DALYs). A DALY is equal to one year of healthy (and productive) life. In economic terms, one DALY saved in Viet Nam translates to one year of earned per capita GDP – currently approximately US\$ 1,960 – and every HIV infection averted in Viet Nam saves an average of 27 DALYs, amounting to US\$ 52,920. The AEM therefore calculated the cost-effectiveness of each scenario by estimating how many DALYs (and thus how much economic productivity) are gained compared to the amount of money invested³⁴. The analysis also took into account the World Health Organization (WHO) guidance that a very cost-effective HIV intervention invests less in saving one DALY than the equivalent of one year’s per capita GDP.³⁵

The worst-case scenario: failing to invest

As outlined above, Viet Nam is facing a dramatic widening of its resource gap, as international donors are withdrawing and domestic funding has yet to increase. The worst-case scenario clearly shows that failing to invest in the response will lead to a rapid expansion of the epidemic, with annual new infections soaring to over 20,000 by 2030.

Figure 8: Comparison of baseline and worst-case scenarios



34. In this analysis, DALYs saved was calculated only based on the number of new infections averted by each scenario. It did not take into consideration the deaths averted among those who had already been infected with HIV. A change to initiating ART at CD4 counts above 350 cells would also reduce mortality. For both these reasons, some of the DALY estimates are likely conservative.

35. According to the WHO, per capita spending on interventions that is less than GDP per capita is “very cost-effective”; where it is equivalent to 1-3 times GDP per capita it is “cost-effective”; and it is “not cost-effective” when it is greater than 3 times GDP per capita. See, for example, http://www.who.int/choice/costs/CER_levels/en/

Saving lives, saving DALYs, saving money: finding the right balance

Based on the comparison criteria, the AEM analysis highlighted five scenarios that offer a good balance between saving lives, saving DALYs and optimizing investment. In ascending order of effectiveness, these are:

Scenario 1: Baseline + adding 80% coverage of immediate treatment (at CD4/1000) for key populations and treatment at CD4<350 for other PLHIV. Investment needed for this scenario is at an average of USD 61 million/year for the period of 2014-2030. This investment will reduce annual new HIV infections to 7,700 cases by 2020 and to 4,550 cases by 2030. **A total of 87,177 HIV infections will be averted during 2014-2030, saving 2,371,000 DALYs or USD 4,647,160,000 in economic terms.**

Scenario 2: Halfway to National Targets + 80% coverage of ART (at CD4/1000) for key, and treatment at CD4<350 for other PLHIV. Investment needed for this scenario is at an average of USD 72 million/year for the period 2014-2030. This investment will reduce new HIV infections to 5,550 cases by 2020 and to 2,450 cases by 2030. **A total of 118,299 HIV infections will be averted during 2014-2030, saving 3,218,000 DALYs or USD 6,307,280,000 in economic terms.**

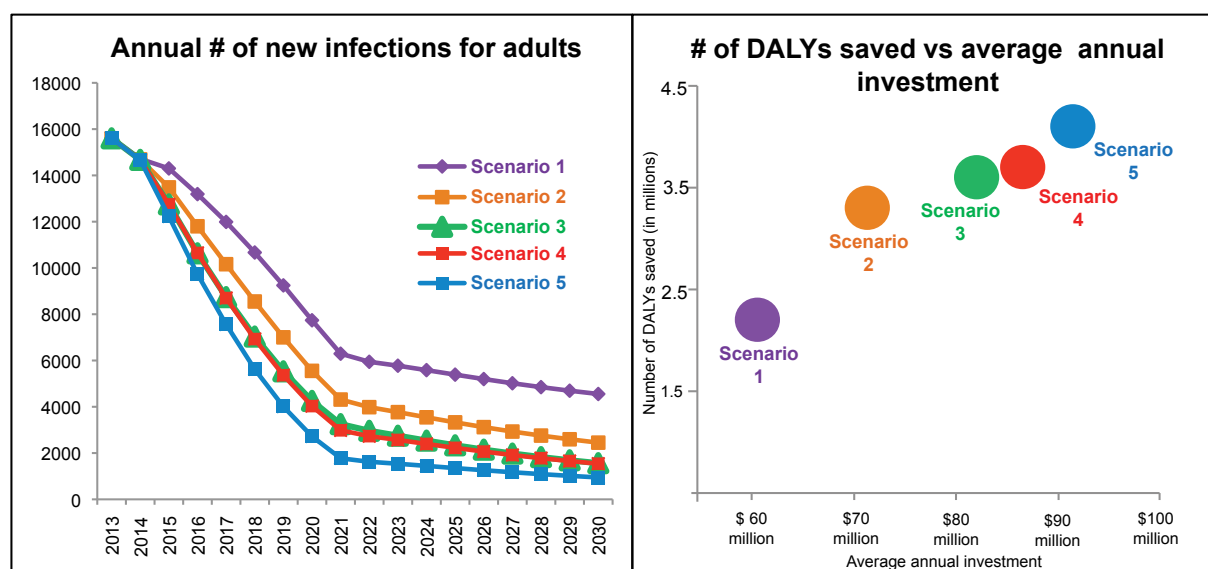
Scenario 3: National Targets + 80% coverage of ART (CD4/1000) for key populations. Investment needed for this scenario is at an average of USD 83 million for the period 2014-2030. This investment will reduce new HIV infections to 4,255 cases by 2020 and to 1,560 cases by 2030. **A total of 135,665 HIV infections will be averted during 2014-2030, saving 3,690,000 DALYs or USD 7,232,400,000 in economic terms.**

Scenario 4: National Targets + 80% coverage of ART (CD4/1000) for key populations and 80% of ART coverage at CD4/500 for other PLHIV. Investment needed for this scenario is at an average of USD 88 million/year for the period 2014-2030. This investment will reduce new HIV infections to 4,030 cases by 2020 and to 1,540 cases by 2030. **A total of 137,385 HIV infections will be averted during 2014-2030, saving 3,737,000 DALYs or USD 7,324,520,000 in economic terms.**

Scenario 5: "Ending AIDS": "National Targets" + 80% treatment coverage for all at CD4 1000, 65% NSP coverage, 35% MMT coverage, and positive prevention³⁶ for serodiscordant couples. Investment needed for this scenario is at an average of USD 92 million/year for the period 2014-2030. This investment will reduce new HIV infections to 2,720 cases by 2020 and to 950 cases by 2030 (less than 1,000 new infections/year is provisionally seen as the "end" of AIDS). **A total of 152,583 HIV infections will be averted during 2014-2030, saving 4,150,000 DALYs or USD 8,134,000,000 in economic terms.**

It is clear from this analysis that immediate ART for key populations is always effective in reducing new infections or in saving DALYs. It is equally clear that, all other interventions being equal, increasing coverage of harm-reduction interventions also increases effectiveness.

36. 80% coverage of long-term sexual partners of PLHIV

Figure 9: Five scenarios – annual new infections, DALYs saved and average annual investment

Ending AIDS by 2030

Finally, the analysis showed that **the most effective approach** in terms of impact on the epidemic (both in terms of saving lives and in cost-effectiveness as judged by the number of DALYs saved) is scenario 5: “Ending AIDS”. The elements of the “Ending AIDS” scenario are: achieving $\geq 65\%$ NSP coverage, $\geq 35\%$ MMT coverage, $\geq 80\%$ coverage for all at CD4 1000 and positive prevention³⁷ for sero-discordant couples. This approach shows that if Viet Nam invests an average of USD 92 million a year, new HIV infections could be reduced to under 1,000 per year by 2030 and HIV will no longer be a major public health threat.

37. 80% coverage of long-term sexual partners of PLHIV

V. Optimizing Viet Nam's HIV response to achieve national targets and goals

Taking Viet Nam's many significant challenges into account, it is clear that targeted interventions, which are selected according to evidence of impact and global best practice, are required if Viet Nam is to get on track toward "Ending AIDS by 2030".

"Ending AIDS" is a vision which can be achieved by an extremely effective response. Based upon this vision, the Steering Committee has agreed upon a set of realistic priorities that can address the key questions of where to invest, for whom to invest, and how to invest to have the greatest impact on Viet Nam's HIV response. These priorities are based on a wealth of national and international evidence, combined with the results of the AEM exercise – which clearly established the benefits of a primary focus upon and scaling up of both harm reduction and ART in reducing new infections and deaths in Viet Nam.

The first two of the six priorities adopted by the Steering Committee are programmatic, and aim to increase the effectiveness of the response for PLHIV and key populations. The third, fifth and sixth priorities aim to make the HIV response more efficient, and the fourth priority calls for much greater domestic investment to ensure the sustainability of the response. Together, implementation of these six priorities will maximize the results achieved from national and international investment in Viet Nam's HIV response, and support the achievement of the country's overall aim of "Ending AIDS by 2030".

Priority 1: Bring to scale evidence-based and comprehensive harm reduction for key populations

Needle and syringe programme

Ensuring the consistent use of sterile needles and syringes is the single most important way to prevent HIV among PWID. The WHO states that the evidence in support of needle and syringe programmes (NSPs) for HIV prevention is overwhelming; that there is no persuasive evidence that NSPs increase injecting drug use at either the individual or societal level; and that NSPs can increase recruitment into drug dependence treatment and primary health care.³⁸ The WHO and other technical agencies stress that evidence from both developed and transitional countries clearly shows that NSPs are also relatively inexpensive and cost effective when they are well-designed and implemented.^{39,40}

Viet Nam's experience is consistent with this international evidence. Significant decreases in HIV prevalence among PWID in recent years are attributable in large part to the steady increase in needle and syringe distribution from 2000 to 2012. A recent evaluation estimated that Viet Nam's needle and syringe programme averted nearly 31,000 HIV infections and saved more than 16,000 life years.⁴¹ However, there has been inconsistency in the results achieved by needle and syringe distribution efforts. In some provinces, despite the availability of free needles and syringes, high HIV

38. World Health Organization (WHO). *Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injecting drug users*. 2004.

39. World Health Organization (WHO). *Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injecting drug users*. 2004.

40. Nguyen, Trang Quynh et al. *Syringe Exchange in the United States: A National Level Economic Evaluation of Hypothetical Increases in Investment*. 2014.

41. An evaluation of one of Viet Nam's largest HIV-prevention projects estimated that needle and syringe distribution averted 30,957 HIV infections and 872 HIV-related deaths. The societal impact of this needle and syringe programme – which operated in 21 of the highest-HIV-burden provinces before closing at the end of 2013 – has been estimated at 16,395 DALYs saved, which would have been lost through ill-health, disability or early death if the drug users had not received the needles and syringes provided by the project.

prevalence persists among PWID. Interviews with drug users reveal that many continue to purchase the majority of their needles from pharmacies and other outlets.⁴² Former and current drug users reported that PWIDs in different regions have different preferences for needles and syringes and the NSP should understand better the need of PWIDs.

Listening to affected people:

We need the right tools at the right time to protect ourselves from HIV

Drug users at the Investment Case consultations explained that most of the needles and syringes distributed for free are good quality, but some are a type that waste a lot of heroin, which make them much less desirable than “red cap” low-dead-space needles available in some pharmacies. These comments were consistent with the findings of the World Bank/DFID project evaluation, which also noted that low-dead-space needles reduce the amount of blood that is drawn back into the syringe before injection, and are thus less likely to lead to HIV transmission if needles are shared.⁴³

These insights shed light on the different findings in behavioural surveys and programme data. For example, drug users participating in focus-group discussions for the evaluation of the World Bank/DFID project reported that, despite the availability of free needles, they bought more than half of their injecting equipment from pharmacies.⁴⁴



Drug users at the Investment Case consultation also pointed out that pharmacies close at 9pm. If they inject later that night or early in the morning, they are more likely to share needles. Peer outreach workers provide free needles after hours, but according to provincial programme managers, the free distribution of

needles and syringes through peer outreach workers is too expensive to be maintained if there is no donor money.

Civil society participants at the Investment Case consultation proposed a solution to this challenge: they are willing to serve as needle and syringe distributors to their drug-using peers. If these needles are provided through a social marketing model, the small profits they make from the sale of the needles will serve as payment. These social marketing models have been successful in reducing needle sharing in Hanoi, Ho Chi Minh City and Thai Nguyen, and a recent pilot conducted in Viet Nam also suggests that such an approach should be applied more broadly.⁴⁵

Moving forward, it will be important to consider the views of drug users and harm reduction service providers, as well as global programming guidance,

42. Zhang, Lei et al. *Evaluation of a decade of DFID and World Bank supported HIV and AIDS programmes in Vietnam from 2003 to 2012*. 2013.

43. See also: *All You Wanted to Know About Needles But Were Afraid To Ask* at <http://harmdeduction.wordpress.com/2010/08/09/all-you-wanted-to-know-about-needles-but-were-afraid-to-ask/> (2010) accessed 11 July 2014.

44. Zhang, Lei et al. *Evaluation of a decade of DFID and World Bank supported HIV and AIDS programmes in Vietnam from 2003 to 2012*. 2013.

45. PSI/Vietnam Research & Metrics. *2013 Behavioral survey among male injecting drug users from three provinces in Vietnam*. Summary Report. 2014.

as NSP efforts in Viet Nam are refined for optimal effectiveness. For example, one of the innovations successfully trialled in Viet Nam is the maximization of access and availability of needles and syringes through a range of distribution methods, including: peer educators; fixed boxes and other “secret” sites for needle exchange; tea stalls; a pharmacy voucher system; health care service distribution (VCT clinics, STI clinics, OPC clinics and primary health care centres); and entertainment services.^{46 47} A recent pilot of the sale of subsidized needles and syringes through pharmacies has also shown promising results.⁴⁸ Scaling up such innovations can help to ensure sustainable and full coverage of these essential and affordable commodities.

Follow-up actions

- Allocate resources for the scale up of needle and syringe distribution to reach at least 65% of PWID, particularly in provinces with large populations of PWID
- Explore distribution modalities, including:
 - ◊ Diversify the free distribution of needles and syringes especially for mountainous areas, gradually scale up of social marketing of needles and syringes in urban areas, ensuring that socially marketed needles and syringes meet the demands of PWID in terms of quality and price
 - ◊ Engaging civil society organizations in the distribution of needles and syringes to PWID at the right places and the right time

Methadone maintenance therapy (MMT)

MMT and other opioid substitution therapy (OST) reduces injecting drug use and needle sharing, and hence exposure to HIV infection: globally, OST has been associated with a 54% reduction in the risk of HIV infection among PWID.⁴⁹ MMT has also been associated with reductions in the proportion of PWID who report multiple sex partners or exchanges of sex for drugs or money – which also reduces exposure to HIV – and there is evidence that it enhances adherence to ART and at the same time significantly contribute to social security and socio-economic development.

In Viet Nam the experience has been similar. A cohort study of methadone patients in Hai Phong and Ho Chi Minh City saw a reduction in illegal drug use from 100% at enrolment to 19-26% after six months. As well as reducing heroin use, the MMT programme in Viet Nam appears to be achieving significant harm-reduction benefits. Among the patients who still injected drugs, none reported sharing needles and syringes. Condom use among MMT patients with regular partners and with sex workers increased, particularly with sex workers.⁵⁰ A WHO study in two provinces showed that male PWID receiving MMT are more likely to be enrolled in care and to have initiated ART, and have a higher retention rate than those not receiving MMT.⁵¹

The benefits of the MMT programme will need to be protected, and access increased for both men and women who inject drugs. Legislation already exists to simplify enrolment in the programme (under Decree 96/2012/ND-CP), but further implementation is needed.

46. Zhang, Lei et al. *Evaluation of a decade of DFID and World Bank supported HIV and AIDS programmes in Vietnam from 2003 to 2012*. 2013.

47. Nguyen, Thi Minh Tam (VAAC). *Viet Nam Experience in Scaling Up Access to Harm Reduction Services*. Presentation to ICAAP. 2013.

48. Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

49. Macarthur, Georgina J. et al. *Opiate substitution treatment and HIV transmission in people who inject drugs: systematic review and meta-analysis*. 2012.

50. FHI360. *Effectiveness evaluation of the pilot program from treatment of opioid dependence with methadone in Hai Phong and Ho Chi Minh cities, Vietnam*. 2014

51. Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

In order to maintain the programme following the withdrawal of international funds, a co-pay system for MMT has been piloted in two provinces, with patients contributing to treatment costs. This system, alongside a scale-up of national methadone production (see below), will help to increase coverage in line with the national target of 80,000 PWID on MMT by 2015 and to make the programme sustainable.

Follow-up actions

- Provinces to develop plans and allocate resources for the scale up of MMT services to meet the national target, including:
 - ◊ introducing MMT services in high-need districts/provinces where they are currently unavailable
 - ◊ introducing MMT services to facilities under the management of the Ministry of Public Security and Ministry of Labour, Invalids and Social Affairs
- Provide training for relevant staff to increase implementation of Decree 96/2012/ND-CP
- Scale up MMT co-pay modality in all provinces with MMT service
- Put in place mechanisms for the involvement of private health providers in MMT provision

Condom programmes

Condoms are a proven tool to prevent the sexual transmission of HIV, when used consistently and correctly.⁵² Under the World Bank/DFID project in Viet Nam, for example, the distribution of free condoms to FSW averted an estimated 1,585 infections and 42 HIV-related deaths.⁵³ National data indicate that 92% of FSW reported the use of a condom with their most recent client.⁵⁴

However, condom use among MSM and PWID remains relatively low, with only 66.4% of MSM surveyed reporting the use of a condom the last time they had anal sex with a male partner,⁵⁵ and 41.2% of PWID reporting the use of a condom at last sexual intercourse. It is therefore important to maintain access to condoms for FSW, and increase access for MSM and PWID – and the sexual partners of men living with HIV and men with high-risk behaviours, particularly PWID. In addition, street-based FSW face additional barriers to condom use, as they are particularly poor and rely on the provision of free condoms. According to some evidence, up to 40% of street-based FSW in some locations in Viet Nam also inject drugs, making them less likely to seek out condoms and much more vulnerable to HIV.^{56 57}

The total market approach provides a sustainable method of ensuring condom coverage, and has already been piloted in Viet Nam. This approach is a system for delivering products – in this case, condoms and lubricant – through all market sectors: public provision; social marketing; and businesses. The goal is to ensure that everybody in need is reached – the poorest receive free condoms, the less poor can access subsidized condoms and those who can pay, do.⁵⁸ This increases efficiency, as public funds for free/subsidized condoms are spent where they are most needed, and funds raised from social marketing can be reinvested in the project. Meanwhile, the commercial sector is not “crowded out” of condom provision, can provide a greater choice of condoms and lubricant for those who can afford it, and can more easily respond to increases in demand.⁵⁹

52. Joint United Nations Programme on HIV/AIDS (UNAIDS), United Nations Population Fund (UNFPA) and World Health Organization (WHO). *Condoms and HIV prevention: Position Statement*. 2009.

53. Zhang, Lei et al. *Evaluation of a decade of DFID and World Bank supported HIV and AIDS programmes in Vietnam from 2003 to 2012*. 2013.

54. HIV sentinel surveillance with a behavioural component (HSS+) and Integrated Biological and Behavioural Surveys (IBBS), 2013. In: Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

55. Please note that data on MSM in Viet Nam remain sparse, despite recent small-scale studies.

56. Zhang, Lei et al. *Evaluation of a decade of DFID and World Bank supported HIV and AIDS programmes in Vietnam from 2003 to 2012*. 2013.

57. PSI/Vietnam Research & Metrics. *Vietnam (2011). Behavioral survey among female sex workers and female sex workers who inject drugs. Round 2. Summary Report*. 2012.

58. PSI. *What is the Total Market Approach?* <http://www.psi.org/total-market-approach> accessed 18 July 2014.

59. Pollard, Richard. *Total Market Approach: Condom Programming in Vietnam*. Presentation. 2011.

The social marketing of condoms in Viet Nam has already had some success through the National Comprehensive Condom Programme and the World Bank/DFID project. In addition, FSW and MSM at the Investment Case civil society consultations indicated that socially marketed and even non-subsidized condoms and lubricant are acceptable to them, provided they are of good quality and available when they are needed. The total market approach helps to increase access, as condoms and lubricant are made readily available through pharmacies and other retail outlets.

Follow-up actions

- Develop plan and allocate resources to further expand coverage of the condom program
- Put in place and implement a “total market approach” to condom provision
 - ◊ Provide free quality condoms to street-based sex workers only
 - ◊ Ensure availability of socially marketed quality condoms and lubricant to other SW, PWID and MSM and the sexual partners of men living with HIV and men with high-risk behaviours, particularly PWID, through appropriate retail outlets
- Maintain outreach and behaviour change communication for FSW, PWID and MSM (and the sexual partners of men living with HIV and men with high-risk behaviours, particularly PWID) on condoms and HIV prevention
- Introduce a quality assurance mechanism for male condoms, including attention to the condom procurement system

Priority 2: Scale up HIV testing and treatment, including immediate treatment for key populations

There is substantial evidence that increasing coverage of antiretroviral treatment not only keeps PLHIV healthier and more productive, but that it is also an important tool for HIV prevention. Global evidence suggests that each dollar invested in HIV treatment generates economic returns of up to three dollars by increasing productivity, preventing children from becoming orphaned and deferring the health care costs associated with advanced HIV-related illnesses, and that expanding ART eligibility is cost effective in the long term.^{60 61} Increased HIV testing and linkages to care for key populations have also been shown to be very cost-effective in concentrated epidemic contexts.⁶² The AEM scenario comparison demonstrated that immediate ART for key populations was always cost-effective.

Increased coverage of ART has been associated across the world with significant declines in the rate of new infections.⁶³ Maximizing the preventive benefits of ART requires early initiation, and early initiation depends on early diagnosis: the sooner a person living with HIV knows his or her status, the sooner s/he can begin treatment.^{64 65} The AEM exercise showed that 152,583 new infections – and 103,996 deaths – could be averted by 2030 if the response is scaled up in line with the “Ending AIDS” scenario.⁶⁶

60. Resch, S. et al. *Economic returns to investment in AIDS treatment in low and middle income countries*. 2011

61. Eaton, Jeffrey W. et al. *Health benefits, costs, and cost-effectiveness of earlier eligibility for adult antiretroviral therapy and expanded treatment coverage: a combined analysis of 12 mathematical models*. *Lancet Global Health* 2014; 2: e23–34. 2013

62. Eaton, Jeffrey W. et al. *Health benefits, costs, and cost-effectiveness of earlier eligibility for adult antiretroviral therapy and expanded treatment coverage: a combined analysis of 12 mathematical models*. *Lancet Global Health* 2014; 2: e23–34. 2013

63. Joint United Nations Programme on HIV/AIDS (UNAIDS). *Strategic use of antiretroviral medicines for treatment and prevention of HIV*. UNAIDS/PCB (33)/13.18, 21 November 2013, pg 9.

64. World Health Organization (WHO). *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: Recommendations for a public health approach*. 2013.

65. World Health Organization (WHO). *Antiretroviral treatment as prevention (TASP) of HIV and TB - Programmatic update*. 2012.

66. Compared to the baseline (current coverage of treatment and prevention, projected to 2030)

The AEM analysis and the “Ending AIDS” scenario are consistent with the new “90-90-90” treatment target, initiated by UNAIDS and due by 2020:

- 90% of all people living with HIV will know their HIV status.
- 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy.
- 90% of all people receiving antiretroviral therapy will have durable viral suppression.

Viet Nam currently has both low levels of HIV testing among key populations (see Figure 4 on page 9) and late initiation of ART. Increased treatment coverage and early initiation will require increased testing coverage for key populations, improved referral for timely enrolment in treatment, and increased adherence to maximise health benefits and ensure viral loads are reduced to levels where transmission is unlikely. Routine viral load monitoring needs to be scaled-up to improve diagnosis treatment failure.

An innovative “test-and-treat” programme for key populations will help to increase testing and early initiation. This means ensuring that key populations take regular HIV tests twice a year, that all those diagnosed HIV-positive are treated immediately (regardless of their CD4 count) and that PLHIV adhere to treatment. HIV testing services will need to be confidential, given concerns over status disclosure and stigma and discrimination from health staff.⁶⁷ Increased use of rapid test kits in community settings will improve the return of results.

The programme will be part of broader efforts to improve the management of diagnosis and treatment by improving service linkages across the “reach, test, treat and retain” cascade. This will require close collaboration between testing and treatment providers and members of key populations and PLHIV communities, since many of those in need are hard to reach due to the stigma attached to their risk behaviours. Establishing peer-support mechanisms for ART patients will help to ensure follow-up and adherence. Key elements of testing and treatment interventions will include:

- A review of existing peer outreach programmes (including training and incentives);
- Giving key population and PLHIV civil society organizations greater responsibility to reach their peers;
- Increased use of mobile HIV counselling and testing modality for areas with a large number of key populations and difficult transportation, and work with community-based organizations and self-help groups for improvement of HIV counselling and referral to HIV testing at health clinics;
- Establish a policy for more frequent viral load testing.

Finally, given the increase in IPT of HIV (between men living with HIV – particularly those who inject drugs – and their wives/long-term sexual partners), it is vital to initiate specific “positive prevention” interventions that can systematically prevent IPT.⁶⁸ As many PWID (and other PLHIV) are unaware of their status, increasing the coverage of HIV testing and counselling services as outlined above will not only serve to ensure these PLHIV can access care and treatment services for their own sake, but will also help to protect their sexual partners. Peer outreach activities aimed at men who inject drugs will be expanded to include outreach to their wives/sexual partners to ensure they are aware of the risks of HIV transmission, the need to test regularly for HIV, and the benefits of harm reduction and ART, and to enable them to access the required services.

67. International HIV/AIDS Alliance. *Positive Prevention: Prevention Strategies for People with HIV/AIDS*. 2003. This document draws attention to the need to undertake these interventions with respect for the rights of PLHIV and their partners, including the right to privacy, confidentiality, informed consent; mindfully of the duty to do no harm; and in a way that does not expose them to increased stigma and discrimination.

68. International HIV/AIDS Alliance. *Positive Prevention: Prevention Strategies for People with HIV/AIDS*. 2003. This document draws attention to the need to undertake these interventions with respect for the rights of PLHIV and their partners, including the right to privacy, confidentiality, informed consent; mindfully of the duty to do no harm; and in a way that does not expose them to increased stigma and discrimination.

Follow-up actions

- Scale up ART to cover 80% of all PLHIV by 2020⁶⁹
- Improve on early treatment initiation and treatment quality, reducing loss in follow-up
- Establish “test and treat” for key populations by:
 - ◊ Providing revised guidelines for peer educators and civil society organizations on the “reach, test, treat and retain” cascade
 - ◊ Training community health staff to ensure confidentiality
 - ◊ Ensuring the implementation of sanctions for breaches of the right to confidentiality and under *Decree No. 176/2013/ND-CP*
- Revise national treatment guidelines to increase the frequency of viral load testing for PLHIV
- Providing guidelines and funding for targeted interventions that include the sexual partners of men who inject drugs and other male PLHIV as a key population in:
 - ◊ testing outreach and services
 - ◊ condom, needle and syringe outreach, provision and social marketing

Priority 3: Focus on key populations in high-burden areas

Analysis of Viet Nam’s epidemic shows that PWID and their sexual partners are the most important populations to reach, followed by FSW and MSM. However, spending assessments show that a large proportion of funding is still going to general population information campaigns that international evidence shows have limited impact in concentrated epidemic settings. Additional focus on key populations is required within the high-impact interventions.

Efforts to reach key populations will be focused where there is a high prevalence of risk behaviours (injecting drug use, sex work and male-to-male sex), and where disease burden is highest. Geographic prioritization uses epidemiological and programme data to classify geographical areas of a country according to the severity of the HIV epidemic in those areas, and thus enable the prioritization of interventions. Geographic prioritization is key to the Investment Approach, as it focuses resources where they will be most effective.^{70 71 72}

In Viet Nam, the HIV response is already being decentralized to the provincial level so that services can be adapted to local sub-epidemics and other localized challenges. In addition, a resource allocation tool has been developed that provides a variety of need-based resource allocation scenarios according to province.⁷³ A provincial unit cost analysis has also showed that economies of scale can be achieved by focusing on high-burden provinces. For full geographic prioritization, these existing initiatives must be supported by the generation of more accurate, timely and comprehensive strategic information. As well as more accurate data collection and reporting from site level, additional, systematic, rigorous epidemiological analysis and the development of nationally appropriate classification criteria (such as population size, prevalence, risk behaviour,

69. Currently at CD4<350 and in the future at CD4<500 and CD4<1000 as resources become increasingly available

70. Schwartländer, Bernhard et al. *Towards an improved investment approach for an effective response to HIV/AIDS*. The Lancet, Volume 377, Issue 9782. 2011.

71. Joint United Nations Programme on HIV/AIDS (UNAIDS). *Concept Note on Geographic Prioritization*. DRAFT. 2011.

72. Joint United Nations Programme on HIV/AIDS (UNAIDS). *Smart Investments*. 2013.

73. Joint United Nations Programme on HIV/AIDS (UNAIDS) et al. *Developing Rational Resource Allocation for HIV/AIDS programming at Provincial Level – Vietnam National Strategy for HIV/AIDS*. DRAFT. 2012.

programme coverage and access to services) is needed. Given the known high burden of HIV in certain places such as rural and mountainous communities and/or areas with large ethnic minority populations, analysis will be undertaken at the commune level as well as the provincial and district levels. Finally, the classification criteria will be flexible to enable adjustments where they become necessary.

Geographic prioritization analyses will also be more consistently followed up with the adjustment of financial resource allocations. Economically successful provinces may be better able to provide funds for prioritized interventions from their own budgets. Other, poorer provinces will require increased allocations from the central budget. Allocation of HIV investment must focus on prioritized areas, including provinces, districts, communes, and living quarters with high epidemic burden.

Follow-up actions

- Allocate appropriate resources to assure the improvement of data quality in order to assure the accuracy, timeliness and comprehensiveness of data
- Develop flexible classification criteria
- Undertake epidemiological analysis and identify gaps
- Undertake additional data collection where necessary
- Match the identified priority areas with appropriate programmatic interventions and where necessary additional budget allocations

Priority 4: Sustainable financing, including increasing the domestic budget and the role of health insurance

Increasing domestic investment

Given the serious and growing funding gap for Viet Nam's HIV response, there is an urgent need to move from the current donor-led (and –funded), project-based approach to an integrated and decentralized response that is financed with domestic resources. Funds must be available to ensure that there is no interruption of HIV services as donors withdraw.

One condition for continued donor support is the fund-receiving country must increase domestic funding for HIV. If this does not happen, existing donor support may be more rapidly phase out than planned. Increasing domestic investment for HIV will therefore play an important role in the mobilization of international financial support for Viet Nam.

This will involve acting on the commitments made in the 2013 Project on Sustainable Financing for HIV/AIDS Prevention and Control Activities in 2013-2020 Period to increase the use of domestic resources for HIV and AIDS to 50% of total spending by 2015 and 75% of total spending by 2020. The Project on Sustainable Financing includes a number of suggested approaches to increasing domestic resources. These include increasing central state budget investment; mobilizing provincial investment and management of resources; integrating HIV activities into existing health mechanisms, such as health insurance; integrating HIV activities into broader socio-economic development activities, particularly at the provincial level; and mobilizing additional sources of revenue, such as from the private sector.

In addition, although international donors are preparing to withdraw from the HIV response in Viet Nam, and many have already reduced funding, some are still present and actively contributing to the response. It is vital that these donors ensure a predictable and responsible transition to domestic funding through a gradual transition period and support for the strengthening of key services and systems in order to assist Viet Nam in managing the response effectively and efficiently following their departure. Donor support will also be crucial with regard to managing the handover to national authorities of systems that have hitherto been managed by donors themselves (including supply chain management, particularly for the procurement of ARV drugs and methadone and other commodities).

Follow-up actions

- Develop advocacy plan for leaders, civil society and related government sectors at national and sub-national levels for continuing financing, political and implementation support to a more sustainable optimized HIV response
- The National Assembly and the Government take resourcing decisions in line with the commitments of the Project on Sustainable Financing for HIV/AIDS Prevention and Control Activities in 2013-2020 Period
- Act on the various approaches to increasing domestic resources suggested under the Project on Sustainable Financing, including the state budget allocation, the regular provincial allocations for HIV, the social health insurance fund, greater engagement of private sector and effective use of resources for the response to HIV
- Call on international donors to slow down their withdrawal of funds and further support the transition to domestic funding and ownership

Health insurance

Financing efficiencies will be created by providing ART free of cost under national health insurance. Evidence from other middle-income countries has shown that social health insurance can play a major role in financing HIV and AIDS services⁷⁴, especially in countries where insurance already covers a significant proportion of the population as in Viet Nam⁷⁵. Again, using health insurance will take advantage of the benefits of the current system and provide cost savings by avoiding parallel spending. It may also help to increase (early) uptake of ART.

Some measures have already been introduced: first-line ART, many drugs for treating opportunistic infections, and HIV testing are already included in the items payable under health insurance. Surveys have also been conducted on the current coverage of PLHIV by health insurance, with a low estimate of 30%. The main reason is ART is provided for free (mainly by donors) so not many PLHIV seeing the need to have health insurance. The current aim is to achieve the same level of coverage for PLHIV as for the general population (80% by 2020). However, a better understanding of coverage, as well as the ability and willingness of PLHIV to make co-payments, is required, as the amended Health Insurance Law will cover 100% of the costs for poor people and 95% of the costs for the near-poor (among other populations). In addition, a standard

74. Oxford Policy Management. *Expanding Long Term Financing Options for HIV in Viet Nam*. 2012.

75. Bitran, Ricardo et al. *The role of health insurance in the fiscal and financial sustainability of HIV/AIDS programs in low and middle-income countries*. <http://www.heard.org.za/downloads/erg-meeting-7-bitran.pdf>. 2010. accessed 31 July 2014.

package of services will be established, further analysis of the costs undertaken, and legal and administrative changes implemented.

Participants at the Investment Case civil society consultations stressed that the delivery of HIV treatment through health insurance will only be successful if ART remains free of charge and it can be delivered in a manner that is both confidential and respectful. It will be important to ensure that those PLHIV not covered by health insurance nevertheless have access to ART and OI treatment.

Listening to affected people:

Funding ART through national health insurance

The civil society consultations made it clear: people living with HIV have several concerns about the delivery of ART through national health insurance that will need to be addressed in order to reach more people with treatment.

The first concern is confidentiality regarding HIV status. As we have already seen, the fear of stigma and discrimination following the revelation of HIV status can prevent PLHIV from accessing HIV services. Participants expressed a particular worry that decentralizing ART from district outpatient clinics to communes under health insurance will increase disclosure of HIV status by commune health workers, and worsen stigma and discrimination. However, pilots of ART decentralization to communal level conducted in Can Tho and Dien Bien provinces showed positive results.

Next, it is vital for PLHIV that ART remain free of charge: it has been shown that user fees for ART reduce uptake and adherence and do not lead to significant cost recovery.⁷⁶ It is also very important that the treatment of opportunistic infections (OI) is covered for free. Hepatitis B and C co-infection is reportedly very common among PLHIV in Viet Nam, particularly among those PLHIV who inject drugs, and treatment costs for these diseases and other OI are very high. It seems that many PLHIV cannot pay for TB testing or for the deposit for in-patient hospital TB treatment, nor can they afford the medicines required to treat OI.

Third, both PLHIV and members of key populations are worried that they will have problems in acquiring insurance cards. The new Health Insurance Law requires that most people buy insurance through their households or workplace, so many who do not have temporary or permanent residence registration will have difficulty in accessing health insurance.

Finally, there are rumours that the number and quality of ART regimens will decrease under health insurance. PLHIV at the consultations said that ART should be provided through fixed-dose combination regimens (as recommended by the WHO).⁷⁷

76. World Health Organization (WHO). The practice of charging user fees at the point of service delivery for HIV/AIDS treatment and care. 2005.

77. World Health Organization (WHO). *Summary of new recommendations: Consolidated ARV guidelines*. 2013

Follow-up actions

- Undertake a comprehensive survey on health insurance coverage among PLHIV and their ability to pay in order to identify and address gaps in coverage
- Develop and/or complete necessary legal framework and guidance for the use of health insurance fund to cover HIV services
- Consolidate the organization and mandates of HIV out-patient clinics to meet the criteria for providing services covered by health insurance as regulated

Priority 5: Integration and decentralization of HIV service delivery systems, including health systems strengthening

Refining high-impact interventions to make them as effective as possible, and increasing domestic investment will put Viet Nam on the road to a sustainable HIV response. But it will not be enough. Viet Nam's health sector must also take steps to reduce the costs of HIV interventions. The key will be to more deeply integrate HIV services within the existing healthcare system.

Viet Nam is already moving to decentralize HIV services. The Treatment 2.0 pilots in Dien Bien and Can Tho provinces have shown that the decentralization of HIV testing, antiretroviral treatment and PMTCT to commune level is not only feasible, it also improves health outcomes and reduces travel costs for patients. In Dien Bien, PLHIV diagnosed at commune level initiated treatment more quickly and at higher CD4 counts⁷⁸. When scaled up, initiatives such as these will save money and contribute to the sustainability of services by: avoiding duplicated/parallel spending on infrastructure, human resources and commodities; taking advantage of the health system's existing cost efficiencies; increasing system efficiency by creating links between related services; and facilitating referrals. They may also provide opportunities to access larger groups of people.⁷⁹

HIV outpatient clinics can be integrated into the healthcare system. In addition, making sure that a range of HIV services – from prevention (including MMT) to testing to treatment – are available in a single location to help save costs and increase coverage.

In addition, increasing coordination between HIV services and related services such as those dealing with tuberculosis (TB) and maternal and child health services (PMTCT) will also provide specific efficiencies and improve effectiveness. Collaboration between the national HIV and TB programmes has already been enhanced in recent years. In 2013, the National TB Prevention Project expanded provider-initiated HIV testing for TB patients, increasing by 14% the number of people co-infected with HIV and TB who received treatment. However, TB treatment coverage among PLHIV infected with TB remains low. Family-based approaches that integrate both adult and paediatric HIV and TB services into the same location can increase coverage and provide further efficiencies.

78. VAAC, HSPH, UNAIDS, WHO. Evaluation Report, Treatment 2.0 Pilot Dien Bien & Can Tho Provinces Viet Nam, 2013.

79. Joint United Nations Programme on HIV/AIDS (UNAIDS). *Smart Investments*. 2013. Experience indicates that integrated HIV counselling and testing services are less expensive than standalone HIV counselling and testing services, and that community-level service provision in particular can provide benefits in terms of cost savings. For example, in India, Kenya and Uganda integrated HIV counselling and testing services were less expensive by 31% to 79%.

The Ministry of Health plans to fully integrate PMTCT into maternal and child health service provision, PMTCT services have also already begun to be integrated into the reproductive health system. HIV counselling and testing for pregnant women has been decentralized to commune health stations and the system for referring pregnant women who receive a positive test to HIV care and treatment services has been partially strengthened. A pilot to link HIV and sexual and reproductive health services focussing on local needs has been undertaken in four provinces, while another aiming to prevent mother-to-child transmission of HIV, Hepatitis B and syphilis as part of routine antenatal care has had considerable success (98.6% coverage of testing).⁸⁰ These initiatives will be scaled up to take full advantage of their efficiencies – both programmatic and financial.

During this transition period, the importance of HIV-related health systems strengthening has never been greater. New technical guidelines, regulations and policies must be put in place to ensure this more-integrated system functions smoothly. Ensuring sufficient human resources who are trained on HIV and AIDS will be a particular challenge. Viet Nam is already facing a severe shortage of qualified health staff working at grassroots level in the area of preventive medicine, particularly in remote and mountainous areas where the HIV epidemic has expanded in recent years. If the transition from donor projects to national health programmes is not handled smoothly, HIV-related human resources may be lost and service delivery could be dangerously disrupted. Capacity building is required for health workers taking over HIV services and the national health system must explore ways to sustainably improve working conditions, health worker remuneration, medical equipment and procurement/supply chain systems. Increasing the role of civil society organizations in service delivery will be an important strategy to reduce costs and improve sustainability. But support will be needed to strengthen community-based organizations so that they are able to effectively work with commune and district-level healthcare providers in the provision of a continuum of HIV services. Technical assistance and financial support of the international community, especially in the sharing of international good practices, are key to the achievement of this priority.

Follow-up actions

- Integrate outpatient clinics into the existing health system
- Provide HIV services, including HIV counselling and testing, MMT and ARV treatment in one location
- Decentralize HIV testing and ART to the primary health care level
- Develop capacity strengthening plan for health workers and CBOs participating in the provision of HIV services, including attention to decentralized levels

80. Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

Priority 6: Sufficient supply of ARV drugs, methadone, reagents and other commodities for the HIV response

Currently only 5% of ARVs are purchased using domestic resources and procurement processes; the other 95% are procured by donors using international procurement mechanisms.⁸¹ Donors also import the majority of the methadone used for the MMT programme. To ensure increased coverage of ART and MMT as donors withdraw, Viet Nam will need to scale-up the efficient procurement of ARVs, methadone, reagents and other commodities using domestic funds and study the possibility of domestic production.

Viet Nam has already begun to address the issue of methadone availability. Local production of methadone is expected to be considerably cheaper than importing methadone. Increasing domestic production will help to meet the growing needs of the MMT programme. In 2013 the Ministry of Health granted permission to five domestic companies that meet requirements to produce methadone; one company is already producing methadone for domestic consumption.

Analyses of ARV procurement data in Viet Nam suggest that the unit costs for domestically procured ARV drugs are much greater than the unit costs of the same medicines procured through international donor programmes mainly due to the domestic procurement of small quantities. International experience also suggests that the careful review and revision of national procurement arrangements (centralized procurement) can lead to immediate and dramatic savings.⁸²

In the short term, as donor support declines and more and more ARV drugs are procured with domestic resources, Viet Nam will need to put in place measures to ensure that it can purchase a range of quality ARV drugs (first line, second line and paediatric formulas) at international benchmark prices. Negotiating lower prices, while at the same time minimizing stock outs and the expiration of medicines, can best be achieved by a centralized procurement mechanism. Government support and cooperation among relevant Government ministries are critical to overcome barriers for international procurement of ARVs.

In the longer term, Viet Nam will need to explore building local capacity to ensure the sustainable supply of affordable ARV drugs.

Follow-up actions

- Establish a national plan for sustainable ARV supply including ARV drug procurement and production, including guiding legislation and guidance for local manufacturers
- Continue the process on manufacturing, management and using of methadone in Viet Nam
- Ensure sustainability, quality control, and affordability of MMT, ARVs, reagents and other related commodities through a centralised procurement mechanism

81. Viet Nam Administration of AIDS Control (VAAC). *Viet Nam AIDS Response Progress Report*. 2014.

82. Joint United Nations Programme on HIV/AIDS (UNAIDS). *Smart Investments*. 2013. For example, South Africa's new tender process for ARV drug purchases resulted in a 53% decrease in overall ARV drug costs, generating estimated savings of about US\$ 685 million over two years. Swaziland and Jamaica have also reduced the costs of ART provision through revised procurement procedures and better forecasting.

VI. Ending AIDS in Viet Nam

The evidence is overwhelming: it will be impossible to end AIDS in the absence of further investment. If we fail to invest in the HIV response in Viet Nam, there will be a resurgence of the HIV epidemic, resulting in the illness and death of large numbers of people and rapidly increasing costs for the public health care system. Viet Nam cannot afford to do nothing. Indeed, more money will have to be spent, whether it is now or later. Investing wisely now will have major positive impacts upon Viet Nam's response to HIV.

The priorities elaborated here provide a realistic and targeted strategy to increase the pace of scale up and the effectiveness of high-impact interventions. Together with the suggested targets under the Ending AIDS scenario, they constitute an Investment Case for Viet Nam's HIV response that will serve to protect those most at risk, to test and treat those living with HIV, and to do this in a sustainable way that is firmly grounded in both best practice and human rights.

Viet Nam faces a severe funding gap as donors withdraw; one which will only increase over time if wise investments are not made now, and if effectiveness and efficiency gains are not achieved. Unless these changes are made, the epidemic will stabilize at a level that Viet Nam cannot afford or, worse, will expand to crisis proportions. The real cost, though, is not about money. It is the potential tragedy of increasing numbers of Vietnamese people getting sick and ultimately dying of AIDS.

There are hard choices to be made. Viet Nam stands ready to make those choices, and is poised to embark on the path toward "Ending AIDS by 2030".

ANNEX I: Investment Case Steering Committee, Technical Working Group and Civil Society Consultation Participants

Steering Committee

| | Name | Title and organization |
|---|------------------------|-------------------------------------------------------------------------|
| 1 | Dr. Nguyen Hoang Long | Director General of Viet Nam Administration for HIV/AIDS Control (VAAC) |
| 2 | Prof. Bui Duc Duong | Deputy Director of Viet Nam Administration for HIV/AIDS Control |
| 3 | Dr. Phan Thu Huong | Deputy Director of Viet Nam Administration for HIV/AIDS Control |
| 4 | Dr. Kristan Schoultz | UNAIDS Viet Nam Country Director |
| 5 | Dr. Masaya Kato | WHO HIV Team Leader |
| 6 | Dr. Michelle McConnell | US Centre for Disease Control (CDC) Country Director |
| 7 | Laurel Fain | USAID Office of Health Director |
| 8 | Chris Detwiler | PEPFAR Coordinator |
| 9 | Dang Ngo | Country Representative, Clinton Health Access Initiative (CHAI) |

Technical Working Group

| | Name | Title and organization |
|----|-------------------------|---------------------------------------------------------------------|
| 1 | Dr. Vo Hai Son | Head of Department of Surveillance, Monitoring and Evaluation, VAAC |
| 2 | Dr. Duong Thuy Anh | Head of Financing and Accounting Department, VAAC |
| 3 | Dr. Do Thi Nhan | Head of Care and Treatment Department, VAAC |
| 4 | Dr. Nguyen Thi Minh Tam | Head of Harm Reduction Department, VAAC |
| 5 | Mr. Do Huu Thuy | Head of Communications and Community Mobilization Department, VAAC |
| 6 | Mr. Le Anh Tuan | Head of General Planning Department, VAAC |
| 7 | Mr. Nguyen Khac Hai | Department of Surveillance, Monitoring and Evaluation, VAAC |
| 8 | Mr. Nguyen Van Luong | Department of Surveillance, Monitoring and Evaluation, VAAC |
| 9 | Ms. Le Hong Thuy | Financing and Accounting Department, VAAC |
| 10 | Dr. Nguyen Thi Ha | National Institute of Hygiene and Epidemiology |
| 11 | Dr. Duong Cong Thanh | National Institute of Hygiene and Epidemiology |
| 12 | Patrick J. Nadol | CDC |
| 13 | Duong Thi Hao | CDC |
| 14 | Nguyen Thi Minh Thu | CHAI |
| 15 | Michael Cassel, | USAID |
| 16 | Nguyen Thi Cam Anh | USAID |
| 17 | Nguyen Duc Duong | USAID |
| 18 | Nguyễn Thu Van | FHI360 |
| 19 | Nguyen Thanh Huyen | FHI360 |
| 20 | Nguyen Thi Van | WHO |
| 21 | Tran Vu Hoang | WHO consultant |
| 22 | Chris Fontaine | UNAIDS |
| 23 | Nguyen Thu Anh | UNAIDS consultant |
| 24 | Kieu Huu Hanh | UNAIDS consultant |
| 25 | Nguyen Thi Phuong Mai | UNAIDS |
| 26 | Nguyen Thi Bich Hue | UNAIDS |

Civil Society Consultation Meeting in Ha Noi

| | Name | Title and organization |
|----|---------------------------------------------|-----------------------------------------------------------------------|
| | Non-governmental organizations | |
| 1 | Do Thi Van | Viet Nam Union of Science and Technology Organizations (VUSTA) |
| 2 | Pham Nguyen Ha | Viet Nam Union of Science and Technology Organizations (VUSTA) |
| 3 | Trinh Le Tram | Centre for Consulting on Laws and Policy in HIV |
| 4 | Dang Thuy Huong | Institute for Social Development Studies (ISDS) |
| 5 | Nguyen Thi Kim Dung | Supporting Community Development Initiatives (SCDI) |
| 6 | Dinh Thi Yen | Centre for Community Health Research and Development (CCRD) |
| 7 | Tran Kim Hue | Centre for Community Health Research and Development (CCRD) |
| 8 | Tran Minh Gioi | Community Health Promotion (CHP) |
| 9 | Vu Phuong Thao | Institute for Studies of Society, Economics and Environment (iSEE) |
| 10 | Pham Khanh Binh | Institute for Studies of Society, Economics and Environment (iSEE) |
| 11 | Pham Quynh Phuong | Institute for Studies of Society, Economics and Environment (iSEE) |
| 12 | Luong Thi Tinh | Centre for Community Health and Development (COHED) |
| 13 | Dang Van Khoat | Viet Nam Community Mobilization Centre for HIV/AIDS Control (VI-COMC) |
| 14 | Do Thi Thanh Nhan | CREA |
| | Networks and CBOs in Ha Noi | |
| 15 | Vu Bao Huy | Chairperson, MSM/TG network, KAP CCM member |
| 16 | Tung Vu | Youth Dream group |
| 17 | Vu Thang | Closet |
| 18 | Pham Thi Minh | Chairperson, Network of People who use Drugs, KAP CCM member |
| 19 | Nguyen Van Thinh | White sand group |
| 20 | Nguyen Thanh Thuy | Peaceful Place group |
| 21 | Lai Minh Hong | Little Sun group |
| 22 | Dong Duc Thanh | Little Sun group |
| 23 | Trinh Thuy Ngan | Ha Noi |
| 24 | Trinh Thi Hoa | Peaceful Place Group |
| | Networks and CBOs in other provinces | |
| 25 | Le Thanh Tung (Gia Minh) | Nghe An |
| 26 | Tran Thanh Thang | Đien Bien |
| 27 | Nguyen Van Cuong | Hai Duong |
| 28 | Nguyen Xuan Cuong | Thai Nguyen |
| 29 | Nguyen Thi Hang | Thai Nguyen |
| 30 | Nguyen Hai Yen | Thai Nguyen |
| 31 | Cao Hong Tu | Quang Ninh |
| 32 | Hoang Viet Hung | Bac Can |
| 33 | Quach Thi Mai | Hai Phong |
| 34 | Hoang Thi Huong | Hai Phong |
| 35 | Nguyen Van Đinh | Hai Phong |
| 36 | Pham Thi Hue | Hai Phong |
| 37 | Đinh Thi Huyen | Hai Phong |
| 38 | Thanh Hoang | Hai Phong |

Civil Society Consultation Meeting in Ho Chi Minh City

| | Name | Organization |
|----|---------------------------------------|-------------------------------------------------------------------|
| | CSO CCM members | |
| 1 | Do Thuy An My | CSO CCM members |
| 2 | Le Minh Thanh | CSO CCM members |
| 3 | Le Son | CSO CCM members |
| | Networks and CBOs in the South | |
| 4 | Vu Ngoc Thuy Phuong | HCMC |
| 5 | Nguyen Thanh Tuan | HCMC |
| 6 | Ngo Mong Linh | HCMC |
| 7 | Lam Thanh Vinh (Lo Lo) | HCMC |
| 8 | Đang Hong Nhung | Nha Trang |
| 9 | Huynh Nhu Thanh Huyen | HCMC |
| 10 | Nguyen Anh Phong | HCMC |
| 11 | Tran Thi Thanh Van | An Giang |
| 12 | Tran Phuoc Toan | Da Nang |
| 13 | Nguyen Thi Duyen | Dak lac |
| 14 | Huynh Chi Dung | Ben Tre |
| 15 | Nguyen Thai Hung | Can Tho |
| 16 | Thuy | Can Tho |
| 17 | Thom | Can Tho |
| 18 | Tat Buu | HCMC |
| 19 | Phan Thanh Nhan | HCMC |
| 20 | Nguyen Van Thien | Kien Giang |
| 21 | Lam Ngoc Thuy | HCMC |
| 22 | Lam Thanh Tuan | HCMC |
| 23 | Luan | HCMC |
| | Local NGOs | |
| 24 | Hang Thi Xuan Lan | LIFE center |
| 25 | Dinh Duc Thien | Center for Applied Research on Men and Community Health (CAR-MAH) |
| 26 | Nguyen Xuan Hai | HCMC AIDS Association |

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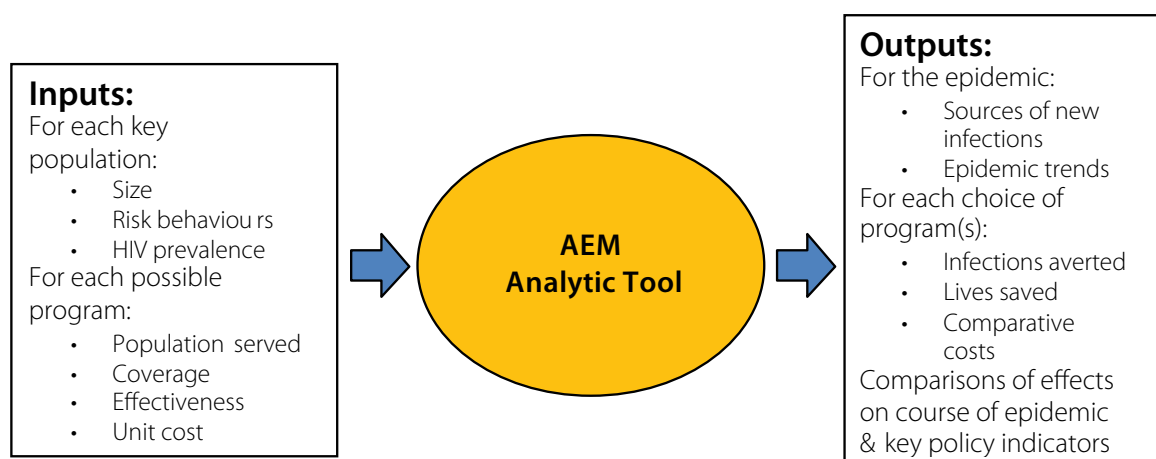
ANNEX 3: AIDS epidemic modelling exercise

The AIDS Epidemic Model (AEM)

The AEM analyses existing data to provide a picture of an epidemic and enable policymakers to estimate the future impact of proposed policies and programme coverage levels, as well as the size of investment required. The AEM is a process model: it models the epidemic, interventions and cost effectiveness. It links behaviour to modelling of the epidemic – for example, it calculates new infections based on modelled behaviour of key populations. It can also model changes in epidemics based on behaviour change. Finally, it links a cost component to interventions (intervention coverage multiplied by unit costs) to model total resource needs.

Two subgroups of the Investment Case Technical Working Group were responsible for collecting and inputting existing epidemiological, behavioural and programme data and the estimated unit costs of existing interventions.

The AEM process



Three workshops were held by the Working Group to develop, validate and analyse a baseline model and a set of scenarios for the response. The first workshop (May 2014) worked towards the development of a baseline model (including unit costs); the second (June 2014) validated and refined the baseline model (including unit costs) and began work on scenarios for Viet Nam's epidemic; and a final review of the scenarios and unit costs was conducted at the third workshop (July 2014).

The Working Group first identified the sub-populations to be modeled in the AEM, including people who inject drugs (PWID), female sex workers (FSW) and men who have sex with men (MSM), both "reachable" and "unreachable". During the process, a further group was added: the long-term sexual partners of HIV-positive PWID and other men living with HIV (MLHIV).

Definitions and assumptions

- o PWID: men aged 18 years or older who reported injecting drugs.
- o FSW: women aged 18 years or older who reported exchanging sex for money.
- o MSM (reachable and unreachable): men aged 15 years or older who engaged in sex with men at least once in the previous 12 months. Reachable MSM are those who can be reached by HIV interventions.

- o Female intimate partners of men living with HIV, who are primarily spouses or regular sexual partners of HIV-positive men who inject drugs, men who are clients of sex workers, and MSM.

Data needs and sources of available data were also identified (including on unit costs, see below), and the data collected, reviewed and selected to serve as input data for the AEM. This included data on key population sizes (PWID, FSW and MSM) from the 2013 Estimations and Projections (EPP) and the general population from the General Statistics Office of Viet Nam. Data on HIV prevalence came from HIV Sentinel Surveillance (HSS) for the years 1994-2004 and from the EPP for the years 2005-2013. Behavioural data was sourced from the HSS with behavioural component (HSS+), Integrated Biological and Behavioural Surveys (IBBS) and surveys conducted as part of World Bank, Global Fund to Fight AIDS, Tuberculosis and Malaria and the Australian Government's HIV/AIDS Asia Regional Programme (HAARP). For ART, data was sourced from Viet Nam Administration of AIDS Control (VAAC) ART programme reports.

Definitions and assumptions

- o Population size for PWID, FSW and MSM: using medium estimates from the EPP process.

Given the uncertainties around the estimates of population size of high risk groups in Viet Nam, three levels of estimates - low, medium and high - were generated. The key assumptions for population size estimates used in the 2013 EPP round are summarized in Table 1 below.

For low estimates, the following assumptions were made about the size of each key population:

- **PWID:** The official numbers of PWID reported by the Ministry of Public Security (MPS) were used as the low estimate. This data was then reviewed and triangulated with data from D28 reports. As estimated by the MPS, 85% of drug users practice injecting drug use. Female PWID are thought to account for 5% of the total PWID population.
- **FSW:** The official numbers of FSW reported by the Ministry of Labor, Invalids and Social Affairs (MOLISA) were used as the low estimate. This data was then reviewed and triangulated with data from D28 reports.
- **Clients of FSW:** There are no studies with reliable data on the population size of male clients in Viet Nam. As in the 2007 estimates and projections round, 5% of adult males aged 15 - 49 years were assumed to be current clients of FSW for the low estimate.
- **MSM:** There is no direct estimate of the size of the MSM population in Viet Nam. Studies in Asia suggest that 1% to 3% of males aged 15 years and older have practiced same-sex behavior in the last year. Because Ha Noi and HCMC are the principal economic, social, and cultural centers of Viet Nam, the population size of MSM in these provinces is thought to be much higher than in other provinces. Thus, for the low estimate, it was assumed that 1% of males aged 15 years and above in Ha Noi and HCMC are MSM. In other provinces, this figure was estimated to be 0.5%.
- **General female population:** The size of the general female population was calculated by subtracting the low estimate for the number of current FSW from the total number of women aged 15 years and older.
- **General male population (including former PWID and clients of FSW):** The size of the general male population was calculated by subtracting the low estimate for the number of current male PWID, the number of male clients of FSW and the number of MSM (both high-risk and low-risk) from the total number of men aged 15 years and older.

For high estimates, the following assumptions were made about the size of each key population:

- **PWID:** The high estimate was obtained by applying a multiplier to MPS numbers for each province. The multiplier was determined by examining data from mapping exercises of PWID conducted as part of routine Provincial AIDS Centre (PAC) work (reported in the D28 reporting form) and from projects supported by the World Bank and DFID. The estimated numbers of PWID obtained from these activities were compared with those provided by MPS to define the value of the multiplier. This value was carefully reviewed and agreed upon by the TWG as well as key stakeholders from PACs.
- **FSW:** MOLISA estimates were tripled to obtain high estimates for the population size of FSW, acknowledging the fact that the number of FSW actually managed by MOLISA is often a few times lower than the actual number.
- **Clients of FSW:** The high estimate was set at 10% of males aged 15 - 49 years.
- **MSM:** The high estimate for population size was established at 3% of adult males aged 15 years and above in Ha Noi and HCMC and 1.5% in other provinces.
- **General female population:** As with the low estimate, the size of the general female population was calculated by subtracting the high estimate for the number of current FSW from the total number of women aged 15 years and older.
- **General male population (including former PWID and clients of FSW):** As with the low estimate, the general male population size was calculated by subtracting the high estimate for the number of current male clients of FSW, the number of current male PWID and the number of MSM from the total number of men aged 15 years or older.

Medium estimates were calculated by averaging the low and high estimates.

Table 1: Key assumptions made for population size estimations¹

| Population | Low estimate | High estimate |
|----------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| PWID | Ministry of Public Security (MPS) data * 0.85 ² | (MPS data * 0.852) * a multiplier |
| FSW | Ministry of Labor, Invalids and Social Affairs (MOLISA) data | MOLISA data * 3, or World Bank estimate (if the latter is higher) |
| Clients of FSW | 5% of males aged 15 – 49 years | 10% of males aged 15 – 49 years |
| MSM | Ha Noi and HCMC: 1% of males aged 15 years and older | Ha Noi and HCMC: 3% of males aged 15 years and older |
| General male | Other provinces: 0.5% of males aged 15 years and older | Other provinces: 1.5% of males aged 15 years and older |
| General female | Number of males aged 15 years and older – 95% PWID ³ (low est.) – MSM (low est.) – Male client (low est.) | Males aged 15 years and older – 95% PWID ³ (high est.) – MSM (high est.) – Male client (high est.) |
| General male | Females aged 15 years and older – 5% PWID ³ (low est.) – FSW (low est.) | Females aged 15 years and older – 5% PWID ³ (high est.) – FSW (high est.) |
| General female | Females aged 15 years and older – 5% PWID ³ (low est.) – FSW (low est.) | Females aged 15 years and older – 5% PWID ³ (high est.) – FSW (high est.) |

¹ These assumptions were made by the EPP Technical Working Group after careful review and triangulation of all existing data sources available on size estimates of different populations as well as through consultations with provincial PACs. Please see: EPP Technical Working Group, Ministry of Health. Preliminary results of HIV estimations and projections in Viet Nam 2013. 2013.

² As estimated by the MPS, 85% of drug users practice injecting drug use.

³ Assuming that female PWID account for 5% of total PWID population.

- o General population size: using data from Spectrum v 5.3 (already cross-checked with General Statistics Office Report.(GSO, 2011. Population Projections for Vietnam 2009 – 2049)

- o HIV prevalence

- PWID:

+ 1994 – 2004: HSS

+ 2005 – 2013: EPP 2013 output

- FSW:

+ 1994 – 2004: HSS

+ 2005 – 2006: EPP 2013 output

+ 2007 – 2013:

EPP 2013 output showed an increasing trend of HIV prevalence among FSW. However, the trend among male clients showed a decline (EPP 2013).

We calculated the reduction in HIV prevalence among male clients:

$$= [\text{HIV prevalence 2006 among male clients (EPP 2013)} - \text{HIV prevalence 2013 among male clients (EPP 2013)}] / \text{HIV prevalence 2006 among male clients (EPP 2013)}$$

$$= (1.22\% - 1.09\%) / 1.22\% = 10\%$$

We used this reduction rate (10%) and applied to adjust for HIV prevalence among FSW (EPP 2013)

| A | B | C | D | E | F | G | H | I | J |
|---|--------------------------------------|-------|-------------|-------|-------|-------|-------|-------|----------|
| 2 | Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| 3 | HIV prevalence among FSW (EPP, 2013) | 4.92% | 4.97% | 5.02% | 5.08% | 5.17% | 5.20% | 5.25% | 5.34% |
| 4 | Adjusted for 10% reduction | 4.92% | 4.85% | 4.78% | 4.71% | 4.64% | 4.57% | 4.50% | 4.43% |
| 5 | Formula for adjustment | =C4 | Interpolate | | | | | | = C4*0.9 |

- MSM: EPP 2013 output for “reachable MSM” group only.
We used the EPP file, excluded all the calibration factors to adjust for non-reachable MSM, and took output as a result on estimated HIV prevalence among reachable MSM.
- General population females: EPP 2013 output
We used the 5 last data points only to include in the model.

- o Behavioural data

Method:

- Reviewed data from different sources according to data mapping table
- Prepared table with indicator values by provinces and years
- Excluded outliers (small denominators, out of range when reviewing trend)
- Calculated mean, median and mid-point of the mean and median
- Calculated weighted average for population size
- Reviewed the mean, median, mid-point and weighted average. The TWG decided which value to include in the AEM baseline workbook.

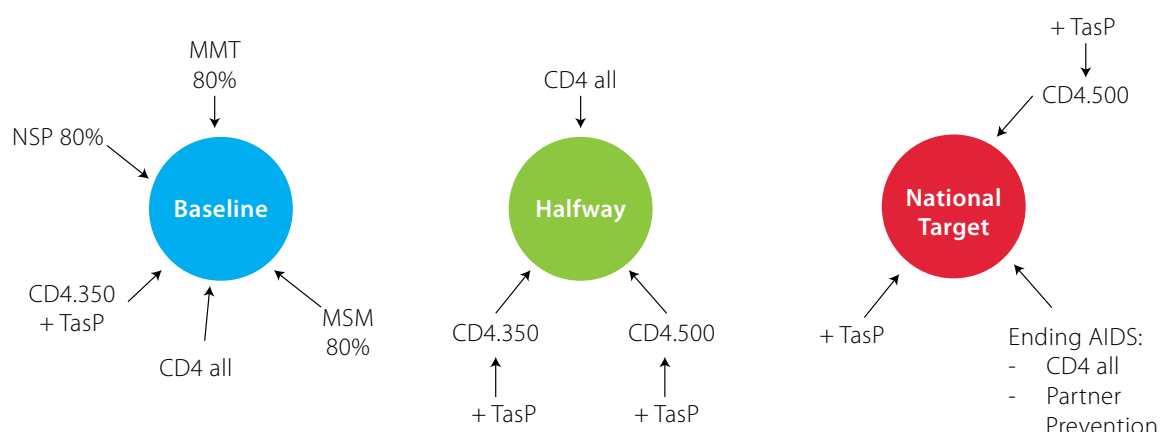
- o ART: Programme data from the VAAC Care and Treatment Department was used to obtain the total number of people receiving ARV treatment from 2002 to 2012.

Following the input of the data, the AEM was run and fit. The Working Group validated the model outputs (see below) against case report figures. This enabled the adjustment and refinement of the AEM baseline

Definitions and assumptions of model outputs

- o The epidemic model generated from behavioural data and HIV prevalence data
- o The number of current infections, new infections, the male/female ratio, and the percentage of PLHIV who are also PWID (among current and new infections)

Once the baseline data had been validated, the Working Group developed intervention baseline (current programme coverage) models. Following a review of meeting notes with VAAC leaders, 3 sets of intervention models based on specific policy scenarios to be modelled were discussed and agreed upon. Finally, the intervention workbooks ("scenarios") were analysed using the AEM impact analysis tool, which enables the comparison of scenarios in terms of resource needs and effect on new infections and deaths averted and DALYs saved.¹



Scenario set 1

1. Baseline
2. Halfway
3. National target CD4 350
4. National target CD4 350 + immediate ART for key populations
5. National target CD4 500
6. National target CD4 500 + immediate ART for key populations
7. Ending AIDS by 2030 (National target + CD4 all + partner prevention)
8. Worst case

¹ DALY: disability-adjusted life year

Scenario set 2 - Strategic use of ART

9. Baseline
10. Halfway prevention + CD4 350, coverage 80% (national target in set 1)
11. Halfway prevention + CD4 350/gene pop + immediate ART for key populations, coverage 80%
12. Halfway prevention + CD4 500, coverage 80%
13. Halfway prevention + CD4 500/gene pop + immediate ART for key populations, coverage 80%
14. Halfway prevention + CD4 all, coverage 80%

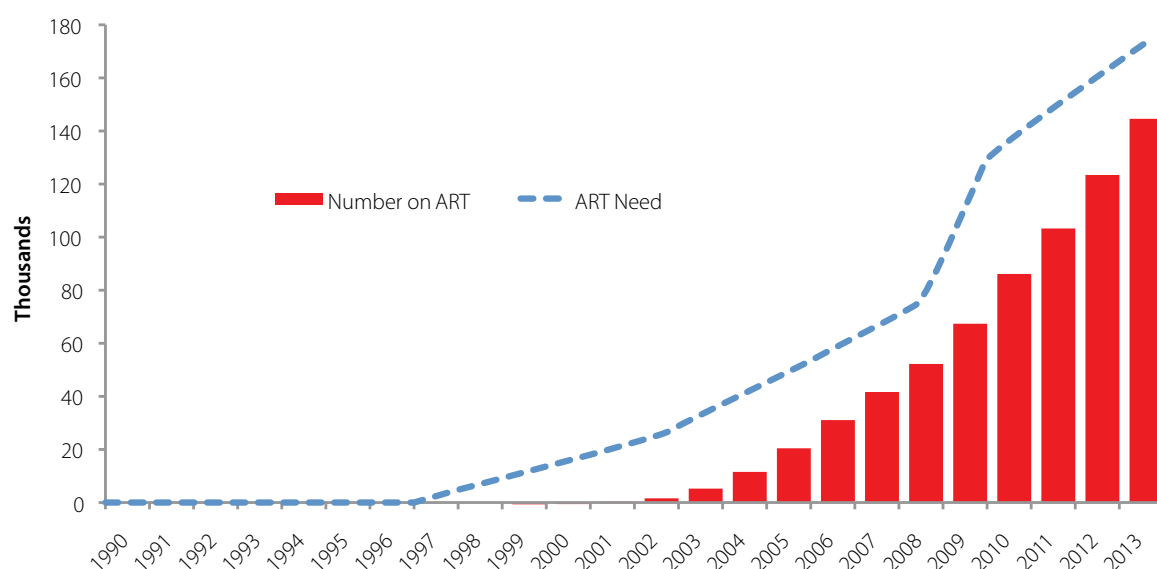
Scenario set 3 - Cost effectiveness prioritization

16. NSP only: 60 and 80%
17. MMT only: 35 and 80% (NSP 20%)
18. MSM only: 70 and 80
19. FSW only: 80
20. Discordant couples only (couple counseling and testing: 2020 = 80%)
21. Treatment all 80% only
22. CD4 350 + immediate ART for key populations
23. CD4 500 + immediate ART for key populations

Baseline

The AEM baseline model was used for the modes-of-transmission analysis and ART needs estimates of the Investment Case. Below are the key graphics generated. The full set of output values are available in the AEM workbook.

ART coverage vs need 1990 to 2013



Sources: VAAC ART programme data and analysis, 2014. Viet Nam AEM

Figure 2: New HIV infections in 2013 by mode of transmission

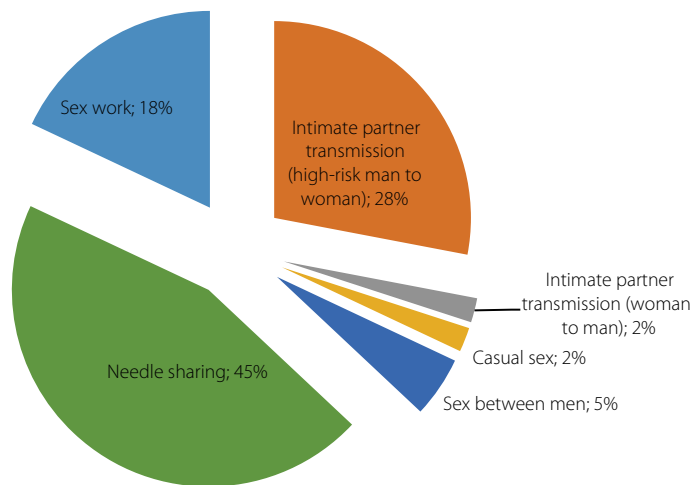
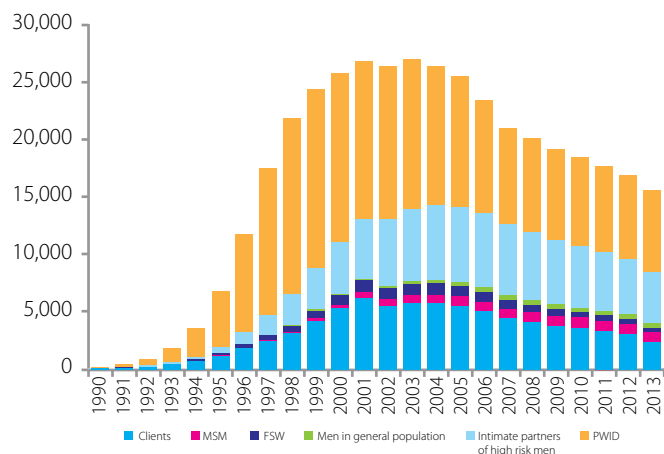
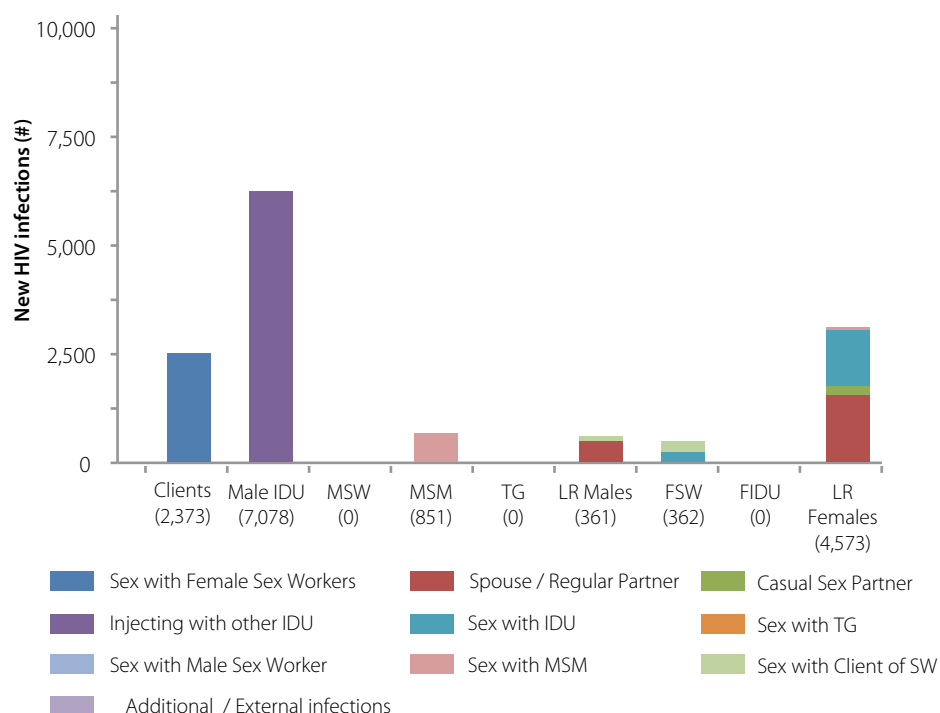


Figure 1: Annual New HIV Infections: by Risk Population, 1990-2020



Distribution of source of new infections by sub-population 2013

Unit costs

The AEM depends on the establishment of unit costs for interventions for the modelling of cost effectiveness. These calculations were based on inputs from the Vietnamese Government (national unit costs) and international donors, including PEPFAR and the Global Fund to Fight AIDS, Tuberculosis and Malaria. Calculations were undertaken for the following commodities:

- Condoms
- Lubricants
- Needles and syringes
- Methadone
- Voluntary Counselling and Testing
- Peer educators
- Meetings (outreach)
- ART and OI treatment

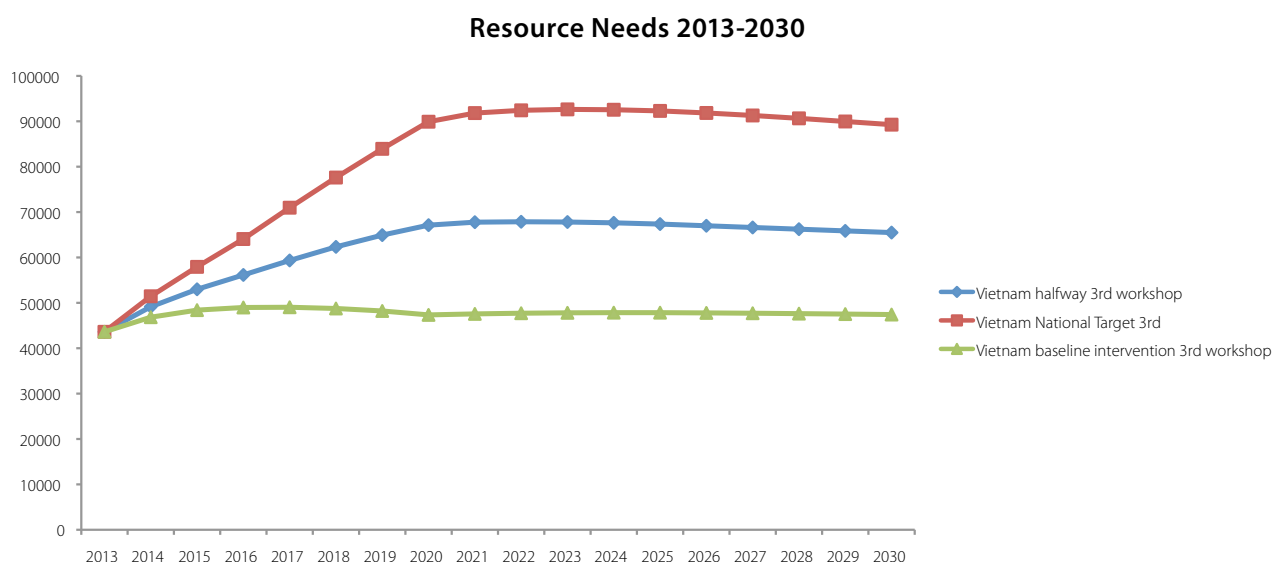
In addition, cumulative costs were established for groups of interventions for the key populations: direct FSW, indirect FSW, higher-risk MSM, needle and syringe exchange for PWID, MMT for PWID and the long-term female sexual partners of PLHIV and PWID.

The estimated unit costs were repeatedly refined and validated with input from government and international donor technical experts at each of the AEM workshops. The scenarios used for this Investment Case are based on the unit costs agreed at the third workshop in July 2014:

Figure 2: Unit costs used for the AEM modelling, July 2014

| | Direct FSW | Indirect FSW | Higher Risk MSM | IDU (NSE) | Partner of HIV positive people and IDU's | IDU (OST) | ART with OI |
|------------------------------------------------------------|--------------|--------------|-----------------|--------------|------------------------------------------|---------------|---------------|
| Condom | 17.33 | 17.33 | 2.97 | 2.48 | | 2.48 | |
| Lubricant | | - | 8.17 | | | | |
| Needle | | - | | 36.5 | | | |
| Methadone | | - | | | | | |
| VCT | 4.82 | 4.82 | 2.41 | 4.82 | 2.41 | 4.28 | |
| PE | 14.29 | 14.29 | 14.29 | 14.29 | | | |
| Meeting | 0.95 | 0.95 | .095 | 2.86 | | 2.86 | |
| Unit cost (US\$) | 37.39 | 37.39 | 28.79 | 60.94 | 2.41 | 181.83 | 285.85 |
| Total Unit cost including non basic program. (US\$) | 57.52 | 57.52 | 44.29 | 93.75 | 3.71 | 279.74 | 381.13 |

When included in the various scenarios, the unit costs were used to generate comparisons of the required resources. For example:



Limitations of the AEM

The Working Group identified several limitations of the modelling that could be remedied for future exercises:

1. Women who inject drugs (WWID) were not disaggregated from the general population of women (they are included in the group of women who are long-term sexual partners of PLHIV/PWID). This decision was taken by the Working Group based on the fact that the population size of WWID is believed to be very small, there is little data available for that group, and many are believed to be included in the female sex worker population.
2. There are potential overlaps in the definition of the female long-term sexual partners of PWID and PLHIV.
3. The modelling of DALYs saved is based on new infections averted only, and does not include deaths averted.
4. The AEM resource needs analysis used average unit costs which may not reflect the varying unit costs of various projects and implementation modalities.
5. The AEM resource needs analysis does not include resource needs for PMTCT or pediatric ART.

