

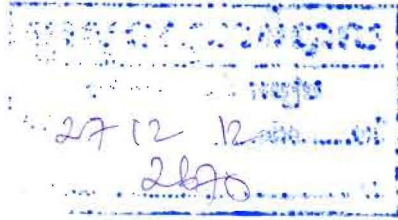
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វេជ្ជ មាន ឈីវុន

**Kingdom of Cambodia
Nation Religion King**



Ministry of Health

**Conceptual Framework for Elimination of New
HIV infections in Cambodia by 2020:**

December 2012



National Center for HIV/AIDS Dermatology and STD

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Preface

In the 1990s (from 1991 to 2000) HIV epidemic in Cambodia spread rapidly and reached its peak in 1998 with an estimated HIV prevalence among general population aged over 15 years-old was 1.7% and declined progressively in subsequent years. In this context, all relevant government institutions and development partners including donors, the United Nations and the civil society made concerted efforts to prevent the spread of HIV with special focus on prevention, particularly on changing unsafe sexual behaviours and 100 percent condom use programme. The initiatives and approaches during the first decade of HIV epidemic was the first phase of the response, called “Cambodia 1.0”.

In the 2000s (from 2001 to 2010) the Ministry of Health, with the support from the National Center for HIV/AIDS, Dermatology and STD (NCHADS) as Secretariat, implemented responsibly the Rectangular Strategy of the Royal Government of Cambodia in the health sector including HIV prevention, care and treatment. During this period several strategies, guidelines and approaches were developed, namely the Continuum of Care for People Living with HIV (PLHIV) implemented at the Operational District level in 2003 and expanded successfully to reach the coverage of antiretroviral treatment for over 50% of PLHIV in need of this treatment. This led Cambodia to be awarded by the World Health Organization. At the same time, there were a significant increase in coverage of HIV testing and counselling and syphilis screening among most at risk populations (MARPs), pregnant women, TB patients and STI patients through the implementation of the Standard Operating Procedures for Continuum of Prevention to Care and Treatment (CoPCT) among MARPs, Linked Response Approach, Three I’s Strategy, and Concept Note for Scaling Up syphilis screening among pregnant women from 2010 to 2015 in Cambodia.

Building on new global initiatives of the United Nations, particularly the “Three Zero” Strategy and the “Cambodia 2.0”, The National Center for HIV/AIDS, Dermatology and STD, Ministry of Health and development partners have developed relevant documents to serve as strategic guidance towards achieving the “Cambodia 3.0” Initiative leading to the elimination of new HIV infections in Cambodia by 2020.

The Ministry of Health has officially approved for the use of this strategic guidance towards achieving the “Cambodia 3.0”, and strongly hope that health care providers and relevant development partners, donors and civil society will use this initiative leading to the elimination of new HIV infections in Cambodia by 2020.

Phnom Penh, 28/December/2012



Mam Bunheng
Dr. MAM BUNHENG
MINISTER OF HEALTH

Acknowledgments

The Conceptual Framework for Elimination of New HIV infections in Cambodia by 2020 is an important document that recommends key strategies and cost effective and high quality package of priority activities. This document has been finalised within a short period of time, thanks to the tireless efforts of an assigned Technical Working Group with members drawn from the National Centre for HIV/AIDS, Dermatology and STD, the National Center for Maternal and Child Health, the National Center for TB and Leprosy Control, and development partners including WHO, UNICEF, UNAIDS, US-CDC, USAID, CHAI, KHANA, FHI 360, RHAC, PSI and other NGOs, whose names are not mention here.

On behalf of the National Centre for HIV/AIDS, Dermatology and STD, I would like to express my sincere appreciation and great gratitude to all members of the Technical Working Group and development partners, who dedicated their valuable time to provide inputs and share valuable experience from national, regional and international perspectives.

The National Centre for HIV/AIDS, Dermatology and STD would like to express its thanks to the Ministry of Health, especially His Excencelly the Minister of Health, who provides full political and policy support and wise receomendations in HIV prevention ,care and treatment since the detection of the first HIV case in the early 1990s.

Phnom Penh, 24 December 2012



Dr Mean Chhi Vun
Director, National Centre for HIV/AIDS,
Dermatology and STD

Conceptual Framework for Elimination of New HIV infections in Cambodia by 2020: as part of the Health Sector Response towards “Three Zeros” (“Cambodia 3.0”)

27 September 2012

1 Introduction

Cambodia, facing in the mid-1990s one of the fastest growing HIV epidemics in Asia, became within five years one of the few countries to have reversed its HIV epidemic. In 2010, Cambodia received a millennium development goal (MDG) award from the United Nations as a global recognition of the country’s efforts on HIV that resulted in a decline of HIV prevalence from an estimated 2 % (among adults aged 15-49) in 1998 to a projected 0.7 % in 2010. The country has also achieved the universal access target for treatment, with over 90% of adults and children in need receiving antiretroviral therapy (ART).

At the UN General Assembly High Level Meeting on AIDS in New York in June 2011, Cambodia expressed its support to the global goals and targets for intensifying efforts to eliminate HIV/AIDS. In line with the global “Three Zeros” and “Treatment 2.0” initiatives, the National Center for HIV/AIDS, Dermatology and STI (NCHADS), Ministry of Health (MOH) is in the process of finalizing a strategic framework with targets, known as “Cambodia 3.0”.

This concept note illustrates achievements to date as well as strategic directions to eliminate new HIV infections in Cambodia as part of the health sector response to achieve the “Three Zeros” by 2020. With the aim of reaching *Zero New HIV Infections*, and in line with the 2012 WHO guidance¹ the following interventions are being considered: accelerating HIV case detection among most-at-risk populations (MARPs), pregnant women, and partners of PLHIV on care and the immediate initiation of ART as Prevention.

To support the elimination of new HIV infections in Cambodia, boosting HIV and STI interventions among MARPS will become a strategic priority. HIV prevalence among MARPS remains high with a cross sectional study on people who inject drugs (PWID) conducted in 2007 by NCHADS revealing a prevalence of 24.4% among this segment of the population². Data collected from the methadone maintenance therapy (MMT) clinic in Phnom Penh also indicated similar HIV prevalence (24% among 187 MMT patients)³. The HIV prevalence among female entertainment workers (FEW) who reported having more than 14 male clients per week was 13.9%, while the prevalence among those who reported having 14 clients or less per week was only 4.1⁴. Sexually transmitted infections (STI) remains a major public health problems among high risk populations in Cambodia. The preliminary results from the STI sentinel surveillance (SSS) in 2011 revealed that among high risk EW (direct sex workers and karaoke girls) STI prevalence was 24% for chlamydia, 9.4% for gonorrhea and 0.94% for syphilis Bros Khmer study identified an HIV prevalence of 2.2%

¹ 2012 WHO Guidelines on *Couples HIV Testing and Counseling including ART for Treatment and Prevention in Serodiscordant Couples* and the Programmatic Update: *Use of Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants* as well as on the recent global discussions on Treatment as Prevention

² NCHADS (2007). HIV Prevalence Survey Among Drug Users.

³ Center for Mental Health and Drug Dependence (2012). Preliminary Results of MMT in Cambodia, from 1st July 2010 to 30th June 2012.

⁴ NCHADS (2011). Estimations and Projections of HIV/AIDS in Cambodia 2010-2015.

among men who have sex with men (MSM) working at hot spot areas. Targeting this population is key to attaining Cambodia’s elimination goal.

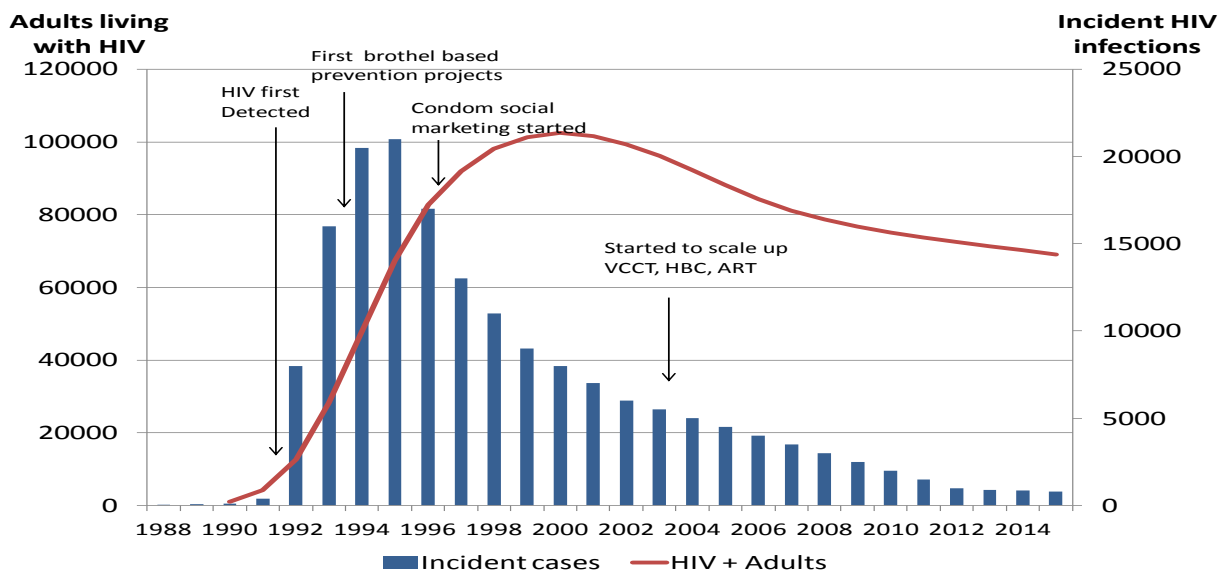
2 Rationale

2.1 Trend of HIV prevalence and incidence

According to the national HIV estimation and projection exercise conducted in 2011, projected HIV incidence is rapidly decreasing from its peak of 20,978 new HIV infections in 1995 to 1,780 in 2010 and 1,007 in 2015 (Figure 1).

Figure 1: Pay attention to the year brackets. Look at the scales and label properly.

Figure 1. Projected Number of New HIV Infections and Number of People Living with HIV



Source: NCHADS (2011). Estimations and Projections of HIV/AIDS in Cambodia 2010-2015

2.2 Building on successful responses

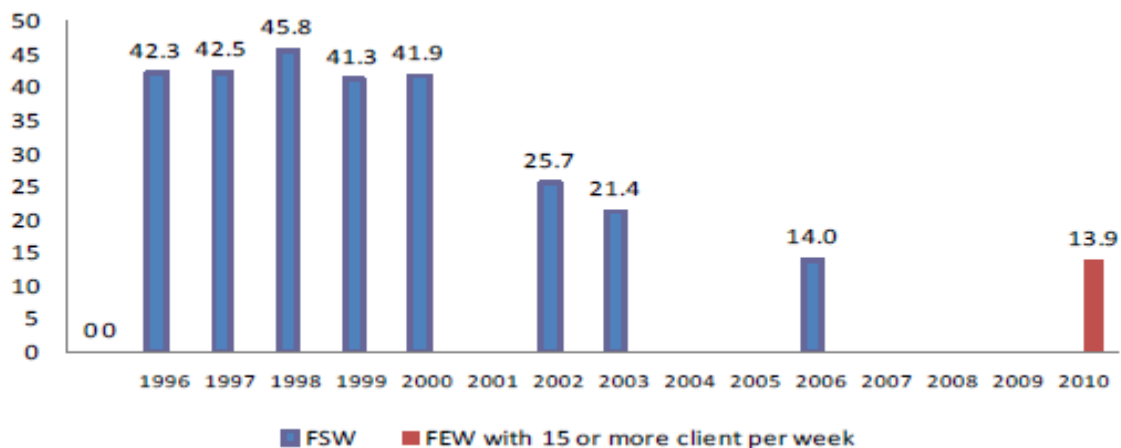
The Cambodia 3.0 builds on successful initiatives including the followings:

2.2.1 HIV prevention targeting Most-At-Risk Populations (MARPs)

The successful 100% condom use program targeting brothel-based female sex workers (FSW) has been modified to reach those in ‘indirect settings’ (e.g. karaoke, massage, beer gardens). Since late 2000s, the modified program includes peer outreach based interventions for “female entertainment workers (FEW)”. The current approach is called “Continuum of Prevention to Care and Treatment (COPCT)”. Despite the introduction of

several new categories of sex worker since 2008, consistent condom use with clients remains higher than 80% although definitions of categories sex workers have evolved since 2007. Monitoring of the trend of HIV prevalence since late 2000s has been a major challenge as illustrated in the Figure 2 below.

Figure 2. HIV prevalence among Female Sex Workers (FSW), compared to Female Entertainment Workers (FEW) who had 15 or more clients per week



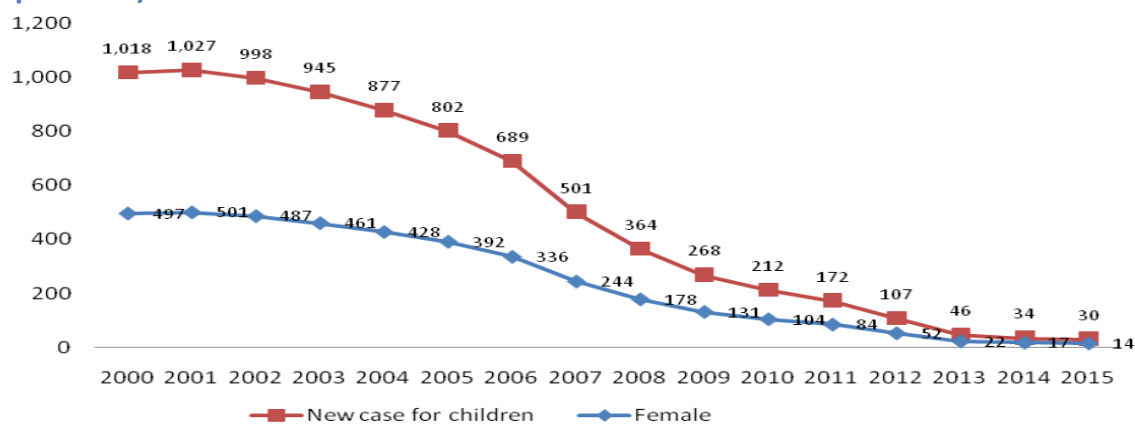
Source: NCHADS (2011). Estimation and Projection of HIV/AIDS in Cambodia 2000-2015

The COPCT is also being applied to men having sex with men (MSM) and people who inject drugs (PWID). Needle Syringe Program (NSP) and Methadone Maintenance Therapy (MMT) for PWID were introduced in 2010. HIV testing and counseling (community/peer initiated HIV testing and counseling: CPITC) was expanded in April 2011 to specifically target MARPS.

2.2.2. Linked Response for PMTCT

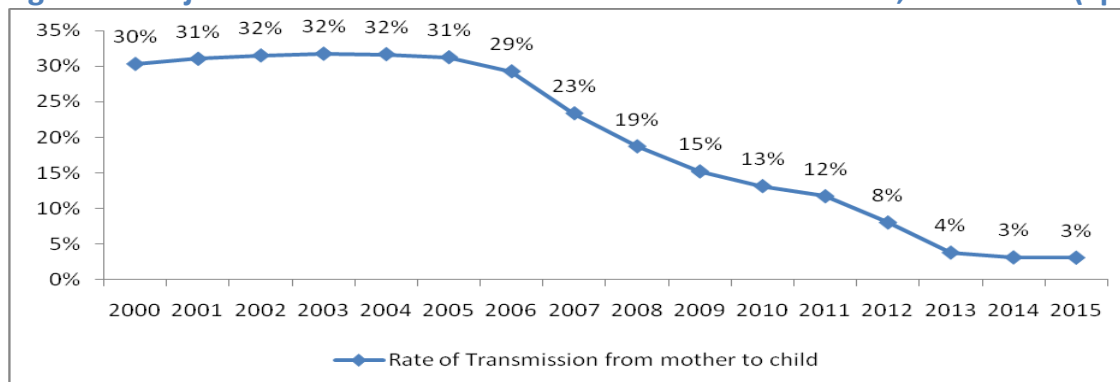
Systematic linkage between HIV and reproductive health services (*Linked Response approach*) has significantly contributed to expansion of PMTCT services. Coverage of HIV testing among pregnant women and coverage of HIV positive pregnant women receiving ARV for prevention of mother-to-child transmission increased from 29% in 2008 to 78% in 2011, and from 27% in 2008 to 64% in 2011, respectively. Consequently, the number of new HIV cases among children and the rate of MTCT greatly decreased over time (Figures 3 and 4).

Figure 3. Number of new HIV cases among children aged 0-14 years, 2000-2015 (Spectrum)



Source: NCHADS (2011). Estimation and Projection of HIV/AIDS in Cambodia 2000-2015

Figure 4. Projected rate of mother to child transmission of HIV, 2000-2015 (Spectrum)



Source: NCHADS (2011). Estimation and Projection of HIV/AIDS in Cambodia 2000-2015 ⁵

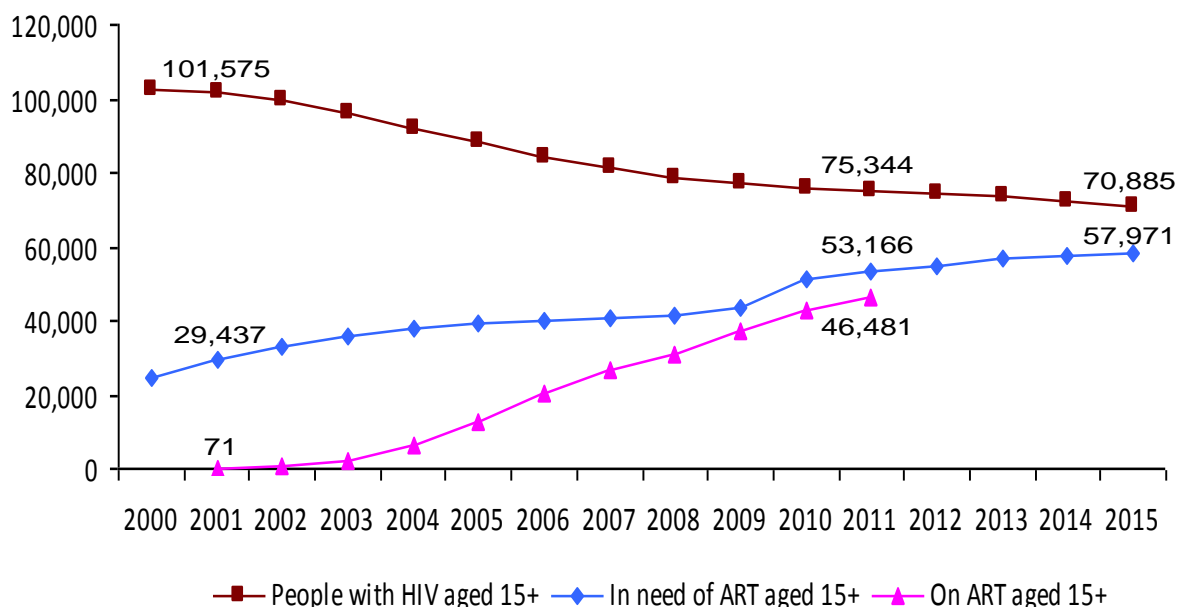
2.2.3. Continuum of care for ART expansion

Universal access to ART has been achieved through systematic involvement and coordination with local authorities, health workers, NGOs, PLHIV (through MMM/mmm-Friends help Friends) and community based prevention, care and support (Figure 5). This continuum of care structure is strengthened by Continuous Quality Improvement (CQI) scheme⁶ which resulted in high level of CD4 count (250/mm³) at enrolment in pre-ART care and good retention in ART (78% at 60 months after ART initiation).

⁵ The Interagency Task Team (IATT) on Prevention of HIV Infection in Pregnant Women, Mothers and their Children continues to review evidence related to effectiveness of ARV regimens in preventing mother to child transmission of HIV. As more evidence emerges regarding adherence to triple ARV regimens and transmission probabilities associated with the latest ARV regimens the existing models will need to be updated to reflect new assumptions. Models used in Cambodia include Spectrum and the Pediatric and PMTCT Impact and Costing Model, both of which reflect assumptions from the 2010 IATT discussions.

⁶ CQI has been introduced in 27 adult Pre-ART/ART sites as of the end of the second quarter 2012.

Figure 5. Number of people with HIV, in need of ART and on ART aged 15+, 2000-2015



Source: NCHADS (2011). Estimation and Projection of HIV/AIDS in Cambodia 2000-2015

3 Goals and Objectives

In line with the Political Declaration on HIV/AIDS at the UN General Assembly High Level Meeting on AIDS in New York in June 2011, Cambodia committed to move towards the **elimination of new HIV infections and congenital syphilis by 2020**.

To achieve these goals, this initiative aims to accomplish the following objectives;

- Achieve universal access to HIV and syphilis testing & counseling in pregnant women and partners of HIV positive pregnant women
- Achieve universal access to HIV and syphilis testing & counseling in MARPs and their main partners
- Establish a system to offer HIV testing & counseling to partners of PLHIV on pre-ART and ART care
- Integrate immediate/early initiation of ART into existing HIV care and treatment system

The measurement of the elimination status of new HIV infections and congenital syphilis will be defined in line with the relevant development of the global Three Zero and congenital syphilis elimination initiatives. The preliminary set of goals includes the following:

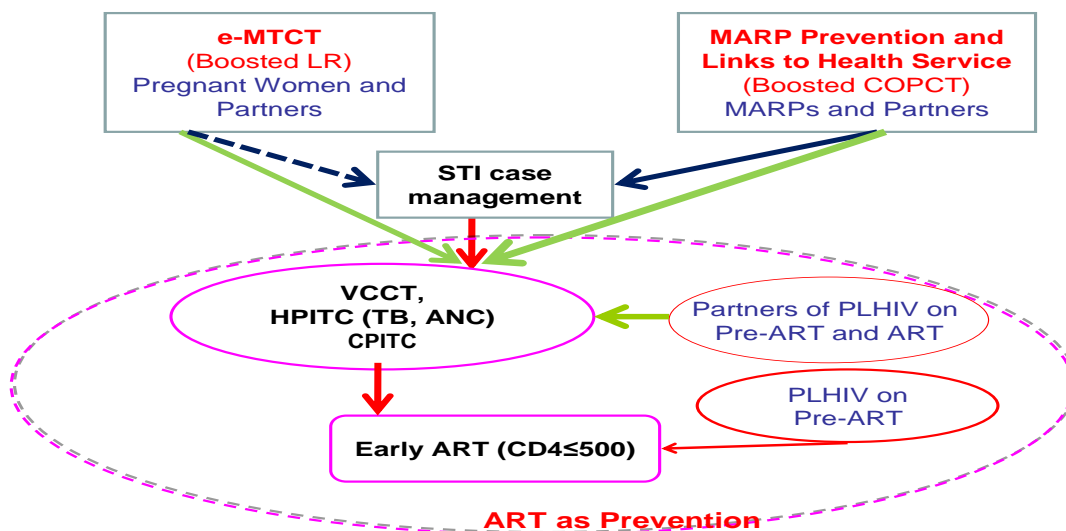
- Reduce estimated HIV incidence among population aged 15 years and older from 18/100,000 in 2010 to 3/100,000 or less by 2020 (*Current projected incidence for 2020 is 5/100,000*)

- Reduce HIV transmission rate from HIV positive mothers to their infants from 13% in 2010 to 2% or less by 2020⁷
- Achieve over 95% coverage of screening for syphilis among pregnant women and over 95% coverage of appropriate treatment of syphilis among positive pregnant women by 2020⁸.

4 Key Principles and Programmatic Strategies

The strategic directions include the three main components: (i) e-MTCT through Boosted Linked Response; (ii) MARPS prevention and links to health services through Boosted COPCT; and (iii) ART as Prevention as part of the Boosted CoC.

Figure 6. Strategic directions for the elimination of new HIV infections in Cambodia



4.1. Key programmatic strategies include the following:

⁷ Overall targets for the Asia-Pacific region include;

- Reduce new pediatric HIV infection by 90% by 2015 (from a 2009 baseline)
- Reduce parents-to-child transmission of HIV to less than 5% (from a 2009 baseline)

(UNICEF, WHO, UNFPA, UNAIDS. Elimination of New Pediatric HIV Infections and Congenital Syphilis in Asia-Pacific, 2011-2015: Conceptual Framework and Monitoring and Evaluation Guide. Bangkok: UNICEF EAPRO, 2011)

⁸ The targets of the global congenital syphilis elimination initiative are

- at least 90% of pregnant women will be screened for syphilis by 2015, and
- at least 90% of syphilis-seropositive pregnant women be treated appropriately by 2015.

(WHO. Methods for surveillance and monitoring of congenital syphilis elimination within existing systems. Geneva: WHO, 2011)

4.1.1.1 Active HIV case detection and immediate enrolment in Pre-ART care

The “active case detection” includes counseling for partner involvement, tracking of sexual network, innovative social network methods, in addition to the current MARPS peer network approach.

- 4.1.1.1 For MARPS and partners**, key approaches and operations will be defined in the SOP on Boosted COPCT (MARPS prevention and linkages to health services).

Strategic options for modeling:

- (a) All MARPs currently targeted (EWs, MSM/TG, PWID/PWUD, prisoners) and TB/STI patients
- (b) (a) plus Main partners of MARPs currently targeted (i.e. Sweethearts of EWs, Specific clients of EWs, Partners of PWID, MSM and TG) and of STI patients

4.1.1.2. For pregnant women and partners, key approaches and operations will be defined in detail in the 2012 revision of Standard Operating Procedure for Implementation of the Boosted Linked Response between HIV, SRH and TB Services for Elimination of New Pediatric HIV Infections and Congenital Syphilis in Cambodia.

HIV rapid testing will be conducted at Linked Health Centers. One sample will be taken and testing conducted using rapid test kits to test for HIV and syphilis. Partner HIV testing will be encouraged through PMTCT counseling. All women attending services will be encouraged to bring her partner back for HIV testing. If women attend services with her partner they will be advised to attend couples counseling session. If the syphilis test is positive, the woman must be referred for treatment at the Referral Hospital or Family Health Clinic. Her spouse should also be referred for treatment, and her exposed infant must be tested and provided with treatment.

Strategic options for modeling:

- (a) All pregnant women
- (b) (a) plus Main partners of HIV positive pregnant women

- 4.1.1.3. For the partners of PLHIV found in VCCT and on pre-ART and ART care**, key approaches and operations will be defined in the Concept Paper on ART as Prevention

Strategic options for modeling:

- (c) Main partners of PLHIV found in VCT located with ART sites and on pre-ART and ART

4.1.2 Immediate/early initiation of ART and retention

- The followings are articulated in the Concept Paper on ART as Prevention;
 - (i) Introduction of CD4 testing in VCCT located with ART sites for accelerating VCCT to pre-ART process;
 - (ii) Strengthening of pre-ART and ART care and its monitoring with introduction of early/immediate ART initiation for targeted populations;

Strategic options for modeling :

- (a) Current practice of starting ART at CD4 less than 350 (irrespective of CD4 for TB cases)
- (b) Start ART irrespective of CD4 count for PLHIV who are sexually active or injecting drugs

(c) (a) plus PMTCT Option B+ for HIV positive pregnant women (ART for life irrespective of CD4 count)

(d) (a) + Option B+

4.1.3 Program principles include the following :

- 1) Use modeling to inform strategic directions and best options and assess achievements
- 2) Use strategic information to improve the quality of interventions and to advocate for improved/sustained political commitment
- 3) Continuous innovation and adjustment for responsiveness based on evidence
- 4) Costing in the context of “doing more with less”
- 5) Preparing for sustainability beyond elimination

5 Strategic Information

In line with the above mentioned objectives and strategies, systems and activities related to strategic information will be adjusted and strengthened throughout the following five phases:

- Phase 1 (2012-2013): Implementation and monitoring of the progress of the proposed strategies;
- Phase 2 (2014-2015): Interim review of the strategies including second mathematical modeling;
- Phase 3 (2016-2019): Intensified monitoring of the revised strategies moving towards the zero new HIV infections;
- Phase 4 (2020): Certification of the zero new HIV infections (2020);
- Phase 5 (2021-): Sustaining the zero new HIV infections status (beyond 2020)

Phase 1 will focus on the monitoring of the proposed strategies with emphasis on regular data analysis, data triangulation, and effective data use. Triangulating data from available sources will ensure existing data is used and allow for a greater understanding of the epidemic and for tracking progresses towards the elimination of new HIV infections in Cambodia.

5.1 Surveillance surveys and studies

5.1.1 Surveillance surveys

Due to the closure of brothels after implementation of the 2008 Law on Suppression of Human Trafficking and Sexual Exploitation, sex work has moved to entertainment establishments. The definition of sex worker has changed as well, from brothel-based, or ‘direct’ sex worker, to female entertainment workers (FEW). FEW work in gardens, karaoke lounges, massage parlors and restaurants. Not all FEW have the same level of risk; in fact, some have never sold sex. An important issue going forward is how FEW can be defined for surveillance purposes.

MSM, TG and PWID are key affected populations that have just recently been included in active surveillance. For MSM, there has been a reliance on special studies. Moving forward, these groups will be regularly included in Integrated Biological and Behavioural Surveys (IBBS). Active surveillance needs to be optimized for programming and targeting most-at-risk populations under Cambodia 3.0. Proxy incidence will be estimated from the prevalence from these sentinel groups.

An IBBS will be conducted for each key affected population every 3-4 years. However, there also is a need to conduct BSS among emerging high risk groups, such as military personnel and female migrant workers, adolescents, in the near future. However, the schedule of surveillance surveys will need to be refined by the Surveillance TWG depending on data needs and on the availability and timing of funding for this purpose. For example, the decision to discontinue HSS among pregnant women should be made only when there are alternative source of data so that the HIV/AIDS estimation and projection for Cambodia could be performed. The next IBBS for entertainment workers is planned for 2014.

STI surveillance survey is another type of IBBS, with additional STI test. SSS is usually very expensive survey. So, it is advised that SSS should be conducted every 5 years among most at risk populations. Currently a STI surveillance Survey (SSS) on FEW is being completed and two IBBS, one for PWID/PWUD and another for TG, are being conducted.

Given the high costs of active surveillance it will be important to find more cost-effective alternatives through passive surveillance, for example by using PMTCT data instead of ANC Sentinel Surveillance.

5.1.2 Population size estimates

Estimates of the size of key affected populations have been conducted in Cambodia since the mid-2000s. Size estimates are available for FEW, MSM, TG, IDU and DU but their quality is uneven and some are now out of date.

For some population groups the estimates have been conducted in conjunction with IBBS, like in the case of DU/IDU and TG whose size estimates are currently being produced. Integration of surveillance and population size estimations is considered best practice also because it helps reducing the cost of data collection. The data obtained every 3-4 years from the surveys will need to be complemented and triangulated with data gathered through mapping of key affected populations.

In general, greater efforts are needed in the future to further improve population size estimates, especially on the methods used and as well as the coordination of the activities across different institutions.

This is especially important considering that these are used to establish denominators which are needed to calculate the coverage of different kinds of interventions.

5.1.3 Ad hoc and periodic studies

In the past, a large number of stakeholders, including government agencies, development partners, NGOs, research and educational institutions have carried out numerous studies related to HIV in Cambodia. In order to coordinate these studies and to enhance data use for program improvement, NCHADS developed an HIV research agenda in 2007. The research agenda will be updated and the coordination activities will be strengthened according to the proposed strategies in this conceptual framework and to produce Cambodia specific data that can be used for mathematical modeling.

5.2 HIV case reporting

Currently, Cambodia has the elements of a HIV case reporting system for new HIV infections but is only reporting aggregate numbers diagnosed at VCCT sites; however, this aggregated reporting only allows for limited analysis of the data and does not allow for removal of clients who test multiple times.

Moving to a more comprehensive case reporting system for all newly diagnosed HIV positive clients would require collection of the information in the Counseling Registration Form (a case report form) along with client name and other identifiers, entry of these newly diagnosed cases into the electronic VCCT database, aggregation and analysis. This case reporting system would allow for de-duplication of clients who test HIV positive multiple times and allow for tracking of newly diagnosed HIV infected patients into pre-ART. In addition, the case reporting system will provide current information about newly diagnosed individuals such as mode of transmission (sex work, MSM, IDU, partner of PLHIV), age, sex, and location. The individual case based reporting system is being developed and will help monitor progress of active HIV case detection and immediate enrolment strategy.

Effort should also be paid to the quality and complete of the case report. The use of routine data depends entirely on the completeness and accuracy of the case reporting system at the facilities level.

Other HIV case reporting sentinel events include first CD4 level, AIDS diagnosis and deaths. In CoCs with CQI, these events are monitored quarterly at facilities through analysis of the ART/ pre-ART database, though they could also be analyzed in the national aggregated database. Cambodia has seen a rise in mean CD4 at entry to Pre-ART from 2007 to 2011, demonstrating entry of patients into care at earlier stages of HIV infection. Regular analysis of these sentinel events and feedback to provinces and CoC sites will help monitor progress in the key strategies and the elimination goal.

5.3 Routine program monitoring for each strategy

Data collected from routine programs such as COPCT, PMTCT, VCCT, STI, pre-ART and ART will be essential for determining who is using services, how often, and whether target populations are being reached. Routine program monitoring frameworks and systems are being adjusted under the Boosted LR and CoPCT SOPs to ensure better harmonization and alignment in monitoring and reporting efforts of implementers and service providers. They will have to use a set of common indicators with similar definitions, monitoring and reporting tools so that data can be more easily aggregated to analyze service uptake and coverage of interventions.

Routine monitoring data will need to be regularly reviewed, analyzed and interpreted by service providers and decision makers to track progress and to adjust program interventions. Routine monitoring data will also have to be triangulated with data obtained from other sources (e.g., surveillance, operational research, evaluations etc) as none of the data sources is perfect. Data triangulation helps to understand the strengths and the weaknesses of each single data source and to calibrate the interpretation of data accordingly. Triangulation of data should be performed on a regular basis with the aim of strengthening capacity to analyze and interpret data and to use it meaningfully to bring about improvements in programs.

Routine impact and output indicators and targets have been established for elimination of MTCT in the Boosted Linked Response SOP. Data for routine output indicators for PMTCT services are collected each quarter and progress towards targets reviewed regularly, semiannually at the minimum. Impact modeling for eMTCT is possible using numerous modeling packages and tools relying on routine program coverage data from these output indicators as inputs. Progress towards achievement of impact indicator targets for eMTCT should be assessed on an annual basis using one of the available tools developed by partners. During these regular annual exercises the program should produce input tables that will inform future comprehensive modeling exercises using Spectrum. Modeling of rates mother-to-child-transmission of HIV and aggregate new pediatric HIV infections will be included in subsequent HIV prevalence estimations using Spectrum (refer to section 4).

Efforts to strengthen routine monitoring systems are complemented by work to introduce a unique identifier system allowing assessment of service uptake and tracking of clients across services. Progress is also being made towards improvements of population size estimations which nowadays are largely being conducted as an integrated fashion with IBBS. Size estimations for PWID/PWUD and for TG are presently being conducted.

5.4 Mathematical modeling

Estimates and projections have been produced in Cambodia since 1998. They are endorsed through consensus workshops involving national and international experts. The strategic information generated so far is crucial for understanding the trends in the epidemic and to assess the impact of the national response. Modeling techniques have improved over time and so has the data inputted into the models which has resulted in better estimates and projections. New estimates and projections will be produced every 5 years and provide information on HIV prevalence, new infections, AIDS-related deaths, orphans and treatment needs.

Measuring HIV incidence is of particular importance. It will allow a better monitoring of the HIV epidemic, targeting of prevention interventions, prioritization and resource allocation to avert the maximum number of new infections, and will also allow an evaluation of the impact of prevention programs. Measurement of incidence is done through modeling and other methods such as direct measurement and laboratory tests.

Given the large sample size needed to perform laboratory tests (e.g. BED assays) regularly and high cost of directly measuring incidence in a longitudinal cohort study, Cambodia plans to continue to use indirect methods such as modeling and proxy incidence by using HIV prevalence among sentinel groups. Strengthening the HIV case reporting system will also contribute to the triangulation of the data for estimating HIV incidence among different populations. To prepare for the Phase 2 and beyond towards the elimination of new HIV infections, improved methodological approaches will be explored to provide information for estimating HIV incidence.

Mathematical modeling will also be used in this framework to answer the following questions:

- What is the appropriate mix of interventions to optimize this impact at the least cost?
- What is the magnitude of the prevention benefit of early/immediate ART in key populations such as FEWs, MSM, and PWID in Cambodia?

- In which settings should early/immediate ART be offered in order to have the greatest overall impact on the epidemic?
- How can the results of clinical trials on treatment as prevention be translated into effective programs, and at what additional cost?

5.5 Planning for evaluation

Quantitative and qualitative data will be collected in a selected number of demonstration sites to establish a baseline against which to evaluate results later on (mid-term and at the end of the programme). The baseline will be collected right at the start of the interventions, from records and other sources at service delivery points. The assessments will use both quantitative and qualitative methods and cover both public and NGO service facilities in demonstration sites.

More specific evaluations and reviews will be designed and implemented where necessary to assess the relevance, efficiency, effectiveness, costs and sustainability of targeted interventions. The quality of services will also need to be evaluated including through client satisfaction surveys. The timing of the assessments will be defined according to data needs and these will involve independent evaluations or internal or participatory reviews depending on the type of information that is needed to adjust strategies and service packages and to document and demonstrate results and impact.

6 Programmatic assumptions

- 6.1. High HIV health service coverage sustained
- 6.2. High HIV prevention coverage among MARPs sustained
- 6.3. Enabling environment will be conducive
- 6.4. Predictability of resources (domestic and international)

7 Program Management

The program will be developed and managed by the several working groups below;

7.1 Core Group on Elimination of New HIV Infections

- Develop and adjust strategic directions and M&E plan
- Guide subgroups and monitor their progress
- Guide and coordinate the development of new/cross-cutting approaches (e.g. partner tracing and involvement, introduction of CD4 at VCCT sites)
- Guide periodic review and adjustment of program implementation (e.g. early case detection among different groups, immediate initiation of ART) and modeling
- Document the process and outcome of the initiative on the elimination of new HIV infections in Cambodia
- Conduct advocacy and resource mobilization

7.2 Subgroup on Boosted COPCT

- Develop SOPs on Boosted COPCT including development of new approaches (e.g. Tracing and involvement of main partners of MARPs)
- Operationalize the SOP including training, modification of monitoring tools, etc.
- Monitor the implementation of the SOP and provide inputs to the periodic review of modeling

7.3 Subgroup on Standard Operating Procedure for Implementation of the Boosted Linked Response between HIV, SRH and TB Services for Elimination of New Pediatric HIV Infections and Congenital Syphilis in Cambodia

- Develop Standard Operating Procedure for Implementation of the Boosted Linked Response between HIV, SRH and TB Services for Elimination of New Pediatric HIV Infections and Congenital Syphilis in Cambodia including development of new approaches (e.g. Tracing and involvement of partners of HIV positive pregnant women)
- Operationalize the SOP including training, modification of monitoring tools, etc.
- Monitor the implementation of the SOP and provide inputs to the periodic review of modeling

7.4 Subgroup on ART as Prevention

- Develop Concept Paper on ART as Prevention including development of new approaches (e.g. tracing and involvement of partners of PLHIV, introduction of CD4 in VCT) and assessment of their feasibility
- Submission to the Ministry of Health for approval
- Operationalize the implementation of the concept paper including training, modification of monitoring tools, etc.
- Monitor the implementation of the concept paper and provide inputs to the periodic review of modeling

7.5 Subgroup on Strategic Information

- Develop a conceptual framework for the model and organize consultative meetings
- Collect inputs for the modeling and run the model
- Consult and disseminate the outputs of the model
- Develop study protocols on operational research for collecting additional parameters for the model
- Organize operational research and disseminate the findings
- Conduct periodic review of modeling and operational research
- Review and strengthen surveillance and program monitoring systems

Membership of the Core Group on Elimination of New HIV Infections

- Chair: Director of NCHADS (Dr Mean Chhi Vun)
- Coordinator: Deputy Chief of Technical Bureau, NCHADS (Dr Seng Sopheap)
- Focal point of the Subgroup on Boosted COPCT (Dr Neth Sansothy)
- Focal point of the Subgroup on Boosted Linked Response (Dr Samreth Sovannarith)
- Focal point of the Subgroup on ART as Prevention (Dr Ngov Bora)
- Focal point of the Subgroup on Modeling and Operational Research (Dr Chhea Chhorvann)
- Chief of Research Unit, NCHADS (Dr Saphonn Vonthanak)
- Chief of Data Management Unit, NCHADS (Mr Mam Sovatha)
- Partner agencies (WHO, UNAIDS, UNICEF, US-CDC, USAID, CHAI, FHI360,)
- Civil Society Representatives (PLHIV, EWs, MSM, DU/IDU, ...)

8 Roadmap

- **Finalization** of the Conceptual Framework for Elimination of New HIV infections in Cambodia by 2020, Standard Operating Procedures (SOP) on HIV Testing and Counselling, SOP for Implementation of the Boosted Linked Response between HIV, SRH and TB Services for Elimination of New Pediatric HIV Infections and Congenital Syphilis in Cambodia, SOP on Boosted Continuum of Prevention to Care and Treatment among most-at-risk populations (MARPS), Concept Note on Treatment as Prevention (TasP) as a Strategy for Elimination of New HIV Infections in Cambodia

Document	Target Date
Conceptual Framework for Elimination of New HIV infections in Cambodia by 2020	Week of 25 September 2012
Standard Operating Procedures (SOP) on HIV Testing and Counselling	Week of 10 September 2012
SOP for Implementation of the Boosted Linked Response between HIV, SRH and TB Services for Elimination of New Pediatric HIV Infections and Congenital Syphilis in Cambodia	Week of 01 October 2012
SOP on Boosted Continuum of Prevention to Care and Treatment among most-at-risk populations (MARPS)	30 October 2012
SOP on Boosted Continuum of Care (CoC) for People Living with HIV	On going starting from 25 September 2012
Concept Note on Treatment as Prevention (TasP) as a Strategy for Elimination of New HIV Infections in Cambodia	29 September 2012
Launch of Cambodia 3.0 Initiative	Date to be confirmed

- **Start implementation of the Cambodia 3.0 Initiative at OD level** (Quarter 4, 2012)

- **Quarter 4, 2012: Battambang OD (“HIV Free OD for ASEAN” by 2015)**
- **2013: Expansion to 6 ODs**
 - Kampong Siam OD, Kampong Cham Province
 - Siam Reap OD, Siam Reap Province
 - ODs Tbong, Cheung and Lech in Phnom Penh
 - O Chrov OD (including Poipet City), Banteay Mean Chey Province
- **Review of the progress (End of 2013)**
- **National Expansion to the 32 High Risk ODs from 2014**

List of HIV High Risk Cities or District in Cambodia

No	Province/Municipality	City/District	MARP	HIV rate among ANC in 2011*
1.	Phnom Penh	1.1 OD Tbaung (Mean Chey)	EW, MSM TG	0.38%
		1.2 OD Leach (Po Sen Chey & Daung Kor)	PWID PWUD	0.25%
		1.3 OD Kandal (Chamkar Monn&7 Makara)		0.43%
		1.4 OD Choeung (Torl Kok, Reussey Keo, Sen Sok)		0.75%
2.	Battambang	2.1 OD Battambang	EW, MSM TG	0.14%
		2.2 OD Sampeo Laun	PWUD	0.55%
3.	Banteay Mean Chey	3.1 OD Serey Sophon	EW, MSM TG	0.33%
		3.2 OD O Chrev including Poipet City	PWUD PWID (2 pers)	0.27%
4.	Pailin	4.1 OD Pailin	EW, MSM,TG PWUD	0.46%
5.	Seam Reap	5.1 OD Seam Reap	EW, MSM TG, PWUD	0.24%
6.	O Dor Mean Chey	6.1 OD Samrong	EW, MSM PWUD	NA
		6.2 OD Aung Long Veng		
7	Preah Vihear	7.1 OD Preah Vihear including Sam Em	EW MSM PWUD	NA
8.	Kandal	8.1 OD Takmao	EW,MSM TG	0.27%
		8.2 OD Kean Svay	PWUD	0.05%
9.	Kg Speu	9.1 OD Chbar Monn	EW, MSM PWUD	0.14%
10.	Takeo	10.1 OD Daun Keo	EW, MSM PWUD	0.16%
11.	Kampot	11.1 OD Kampot	EW, MSM PWUD	0.27%
12.	Preah Sihanouk	12.1 OD Preah Sihanouk	EW, MSM PWUD	0.69%
13.	Koh Kong	13.1 OD Smach Mean Chey	EW, MSM PWUD	0.33%
14.	Pursat	14.1 OD Sampeo Meas	EW, MSM PWUD	0.10%
15.	Kg Chhnaing	15.1 OD Kg Chhnaing	EW, MSM PWUD	0.15%
16.	Svay Rieng	16.1 OD Svay Chrum	EW, MSM PWUD	0.04%
		16.2 OD Chi Phou/ Bavet City		NA
17.	Prey Veng	17.1 OD Kg Leav	EW, MSM PWUD	0.10%
		17.2 OD Neak Loeung		0.10%

18.	Kg Cham	18.1 OD Kg Seam- Kg Cham 18.2 OD Memot	EW, MSM PWUD EW,MSM,PWUD	0.15% 0.10%
19.	Kg Thom	19.1 OD Kg Thom	EW, MSM,PWUD	0.10%
20.	Kratie	20.1 OD Kratie	EW, MSM PWUD	0.39%
21.	Stung Treng	21.1 OD Stung treng	EW, MSM PWUD	NA
22.	Ratanakiri	22.1 OD Ratanakiri	EW, PWUD MSM	NA
23.	MondolKiri	23.2 OD Mondolkiri	EW, PWUD	NA
	Total: 22 Provinces 1 Municipality	32 ODs		

*data reported by the Linked response OD in 2011, reflecting new HIV infections