

**Kingdom of Cambodia**  
**Nation Religion King**



Ministry of Health

**Strategic Plan for HIV/AIDS and  
STI Prevention and Control in the Health  
Sector 2016-2020**

October 2016



National Centre for HIV/AIDS, Dermatology & STD  
(NCHADS)

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## Preface

The Health Sector Strategic Plan for HIV/AIDS & STI Prevention and Control 2016-2020 (HSSP-HIV) underpins the governance of the HIV/STI program in Cambodia and is the core document to guide the program to reach global HIV 90-90-90 targets by 2020 and virtual elimination of HIV in Cambodia by 2025.

This Strategic Plan represents a major achievement for the HIV/AIDS and STD program and recognizes of the valued contribution of all stakeholders and partners, and acknowledges that the HIV prevention, care and treatment program is not directed by NCHADS in isolation - Provincial Health Departments, Operational Districts, Health Center staff, and NGO partners all have key roles to play.

This plan represents a determined effort to learn practical lessons from implementation, to listen to the advice of technical experts expressed through the Joint Review of the Cambodian National Health Sector Response to HIV (2013), and to make the final push towards Cambodia 3.0 – and the virtual elimination of new HIV infections by 2025.

The Ministry of Health agrees and supports this Health Sector Strategic Plan for HIV/AIDS & STI Prevention and Control 2016-2020 (HSSP-HIV) and expects that all development partners will collaborate to ensure the successful implementation and monitoring of this Strategic Plan. *Eng Huot*

Phnom Penh, *16 August* 2017

*For* Minister of Health *HS*



**Prof. ENG HUOT**  
SECRETARY OF STATE


## Acknowledgements

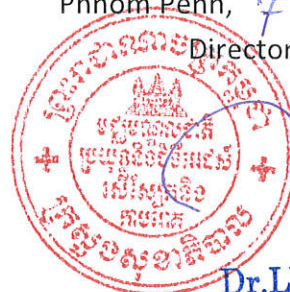
The invaluable contribution, enthusiasm and hard work from NCHADS technical units and all stakeholders has made possible the successful development of this *Health Sector Strategic Plan for HIV/AIDS & STI Prevention and Control in Cambodia 2016-2020 (HSSP-HIV)*.

I would like to thank the staff of NCHADS for coordination; and in particular to NCHADS technical units for ensuring that components are evidence-based and cost-effective; the Provincial Health Departments, PASP teams and Operational District staff for their practical contributions to ensure workable strategies, and special acknowledgement of the input from local and international partners, members of the various Technical Working Groups, other departments within the Ministry, government institutions, civil society, as well as PLHIV-networks and Key Populations advocacy groups for their generous contribution.

Thanks for the support with leadership from the Ministry of Health which has been the driving force to inspire NCHADS and development partners to achieve the successful implementation of this strategic plan.

Phnom Penh, 7/8/2017

Director of NCHADS 



**Dr. LY PENH SUN**

## A. INTRODUCTION

### A.1 SOCIO-ECONOMIC OUTLOOK

The Kingdom of Cambodia is located in the southwest portion of the Indochina peninsula, and comprises 24 provinces and one municipality (Phnom Penh) with a total estimated population in 2015 of 15.3 million.<sup>1</sup> The 2013 intercensal survey showed that the vast majority of Cambodians lived outside urban areas with 79% located in rural zones covering more than 14,000 villages, while the remaining 21% were urban dwellers located in 26 cities. The survey also revealed that 66% of the population was aged between 15 and 65 and the annual population growth rate was calculated at 1.46%. Medium-sized households were the norm throughout the country with an average of 4.7 persons under one roof in rural or urban settings.<sup>2</sup>

More than half the population was employed (62% for men and 59% for women). The mean age at marriage was recorded as 26 years for men and 24 for women; with 62% of those older than 15 years of age were married. Adult literacy was 86% among men and 74% among women; with 90% in urban areas, and 77% in rural areas. Education statistics showed that in the 5-11 age group 74% attended school (73% boys, 75% girls), in the 12-14 age group 88% (equal by sex), and in the 15-17 age group, 64% boys and 59% girls. Life expectancy at birth averaged 77 in urban and 68 in rural areas.<sup>3</sup>

Infant mortality is more three times lower since 1990 from 85/1000 live births to 25/1000 in 2015, under 5 mortality was 117/1000 in 1990 decreasing even more radically to 29/1000 by 2015.<sup>4</sup>

Cambodia achieved strong growth rates during the past decade with the economy posting an average annual Gross Domestic Product (GDP) of 7.2% since 2011 with a similar forecast for 2017.<sup>5</sup> The rising GDP has impacted on the HIV response by triggering a considerable reduction in Official Development Aid (ODA) commitments from 2015, accompanied by pressure

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<sup>1</sup> <http://data.worldbank.org/country/cambodia> accessed 26 April 2016

<sup>2</sup> Data from Cambodia Inter-Censal Population Survey 2013, National Institute of Statistics Ministry of Planning Phnom Penh

<sup>3</sup> Data from Cambodia Inter-Censal Population Survey 2013, National Institute of Statistics Ministry of Planning Phnom Penh

<sup>4</sup> UNICEF <http://www.childmortality.org/> Accessed 3 May 2016

<sup>5</sup> ADB Cambodia (accessed March 10 2016) <http://www.adb.org/countries/cambodia/economy>

from donor partners for a larger contribution from domestic sources. The Human Development Index (HDI) released by the UNDP in 2015<sup>6</sup> showed that Cambodia was ranked 143 in 2015 out of 188 countries, and apart from Myanmar (148) Cambodia had the lowest rating of the ten ASEAN member states.<sup>7</sup> However living standards have improved overall as measured as Gross National Income (GNI) per capita (Purchasing Power Parity). Between 1995 and 2015, Cambodia's GNI per capita increased by 357% from US\$300 to US\$ 1,070 (2015 PPP\$).<sup>8</sup>

According to the assessment released in 2013, Cambodia achieved several Millennium Development Goals (MDG).<sup>9</sup> Poverty reduction targets were met with rates falling sharply from 47.8% in 2007 to 18.9% by 2012<sup>10</sup> but the need to further improve the nutrition status of children and women remains a key priority (MDG 1). Declines in infant mortality were met at national aggregate level (MDG 4), while maternal mortality exceeded 2015 targets (MDG 5).<sup>11</sup> Preventing the pandemic of identified communicable diseases and HIV/AIDS (MDG 6) have been successful, and these targets should have been met by 2015.

## A.2 SITUATION ANALYSIS and RESPONSE

Cambodia is one of the few countries in the world to have successfully reversed its HIV epidemic and is approaching universal access to HIV treatment. This has largely been as a result of strong political commitment to sound management, broad-based stakeholder partnerships, and effective implementation based on Standard Operating Procedures (SOP). In 2010 in recognition of these achievements, Cambodia received a United Nations Millennium Development Goal award.<sup>12</sup>

Cambodia's response to its HIV epidemic is characterized by three phases. In the first phase 'Cambodia 1.0' from 1991-2000 HIV prevalence among adults peaked at 1.7% with more than an estimated 20,000 incident cases. Cambodia

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<sup>6</sup> <http://hdr.undp.org/en/countries>

<sup>7</sup> ASEAN HDI 2015: Myanmar 148, Cambodia 143, Lao PDR 141, Vietnam 116, Philippines 115, Thailand 93, Malaysia 62, Brunei Darussalam 31, Singapore 11.

<sup>8</sup> <http://data.worldbank.org/country/cambodia> (accessed 15 July 2016)

<sup>9</sup> [http://planipolis.iiep.unesco.org/upload/Cambodia/Cambodia\\_MDG\\_Progress\\_report\\_2013.pdf](http://planipolis.iiep.unesco.org/upload/Cambodia/Cambodia_MDG_Progress_report_2013.pdf)

<sup>10</sup> <http://www.adb.org/countries/cambodia/poverty> (accessed March 10 2016)

<sup>11</sup> 2014 UNDP Cambodia Annual Report (accessed March 10 2016)

<http://www.kh.undp.org/content/cambodia/en/home/library/annual-report/annual-report-2013.html>

<sup>12</sup> <http://www.unaids.org/en/resources/presscentre/featurestories/2010/september/20100920fsmgdcamboda-award/>



1.0 focused on brothel-based HIV prevention, Voluntary, Confidential Counselling and Testing (VCCT), provision of home-based care services, and People Living with HIV (PLHIV) support groups.

The second phase from 2001-2011 saw a significant decline in adult HIV prevalence as well as concurrent declines in mortality. In this phase the overall health system was strengthened, ART coverage reached more than 75% of PLHIV,<sup>13</sup> the Continuum of Care (COC) approach was institutionalized, and HIV programming was linked with tuberculosis and maternal and child health services. Prevention activities were broadened to focus on key populations - Female Entertainment Workers (FEW - direct and indirect sex workers), Men who have Sex with Men (MSM), Transgender individuals (TG) as well HIV and harm reduction services for People Who Inject Drugs (PWID) undertaken in collaboration with the MOH Department of Mental Health and Substance Abuse (DMHSA) and NGO partners.

In June 2011 at the UN General Assembly High Level Meeting on AIDS, the National Centre for HIV/AIDS, Dermatology and STD (NCHADS) launched the third phase of the response, known as 'Cambodia 3.0'. This phase supports the global goals and targets - 'Three Zeros' and 'Treatment 2.0' - for intensifying efforts to eliminate new HIV infections by 2025. Cambodia 3.0 will be in place from 2012-2020 and aims to achieve the 90-90-90 global targets in this timeframe.

The Spectrum AIDS Impact Model (AIM) using 2015 data estimated the HIV prevalence rate in adults (15-49 years) was 0.6%. The estimated incidence in 2016 for adults and children was 0.04 per 1000 uninfected, translating into around 654 new infections. The projection suggests that this will fall to 0.03 per 1000 by 2020 equaling 452 new infections; 0.025 by 2025 per 1000 equaling 365 new infections, and 0.02 per 1000 by 2030 equaling 305 new infections.

Spectrum AIM analysis provided an estimate of 72,607 PLHIV (adults and children) in Cambodia, of whom 57,651 are confirmed in care (Table 1). Therefore around 14,956 people who are infected with HIV are not yet included in the HIV care cascade.<sup>14</sup>

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<sup>13</sup> No. PLHIV on ART / Total estimated No. of PLHIV

<sup>14</sup> AEM 2016 exercise based on 2015 data

While efforts to find the remaining infections have been highly successful, in 2015 the 3,951 newly identified PLHIV at VCCT centers, were likely a combination of both recent and older infections. In 2015 Boosted Integrated Active Case Management (B-IACM) found that nearly two thirds of newly infected cases do not come from the usual designated risk groups (e.g. key populations) but were considered coming from the 'general population' posing new challenges in adapting strategies to find the remaining HIV positive individuals.

In 2010 there were estimated 5,900 children living with HIV, but this figure decreased steadily to 4,046 in 2015. The rate of mother to child transmission in Cambodia at six weeks was about 13% in 2010 and fell to around 6% in 2015 with a target is <5% by 2020 in breastfeeding populations.

*Table 1 HIV burden in Cambodia*<sup>15</sup>

*Data from UNAIDS SPECTRUM (AIM) 2016 using 2015 NCHADS data all other data from NCHADS-DMU pre-ART/ART reports 2015		
Estimated prevalence (adults 15-49 years) *	0.6%	SPECTRUM
Estimated incidence 2016 (children & adults) * (per 1000 uninfected)	0.04	SPECTRUM
Estimated PLHIV (children & adults) *	72,607	SPECTRUM
Estimated PLHIV (15 years+) *	68,561	SPECTRUM
Children living with HIV (0-14 years) *	4,046	SPECTRUM
PMTCT need (HIV+ pregnant women needing PMTCT) *	954	SPECTRUM
PLHIV (children & adults) on ART (2015)	54,769	DMU
PLHIV on pre-ART (2015)	2,882	DMU
Total in care ART, pre-ART (2015)	57,651	DMU
Not in care (2015)	14,956	calculated
2020 target (90% of total estimated PLHIV)	65,346	calculated
On ART and viral load tested (children & adults 2015)	37,568	DMU
Viral load suppressed (children & adults 2015)	35,056	DMU
% of first 90 target in 2015	79.4%	calculated
% of second 90 target in 2015	75.4%	calculated
% of third 90 target in 2015	64.0%	calculated
% on ART & VL tested in 2015	68.6%	calculated
%(children & adults) retained after 12 months on ART in 2015	78.9%	GARPR <sup>16</sup>

<sup>15</sup> Source NCHADS DMU ART/pre-ART report: Jan to Dec 2015 & UNAIDS Spectrum AIM analysis 2016 using 2015 data  
<sup>16</sup> % retained after 12 months = Total no. of PLHIV end of 2014 / Total PLHIV on ART in 2015- deaths & losses (GARPR)

Figure 1 90-90-90 status in 2015

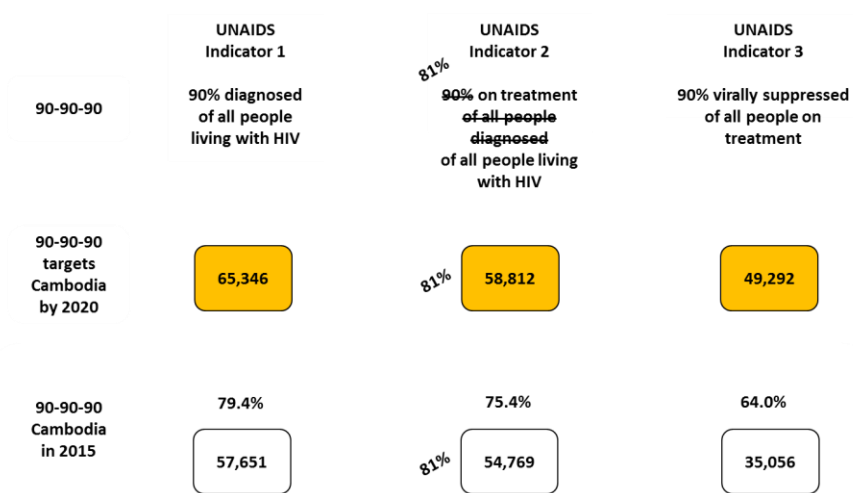
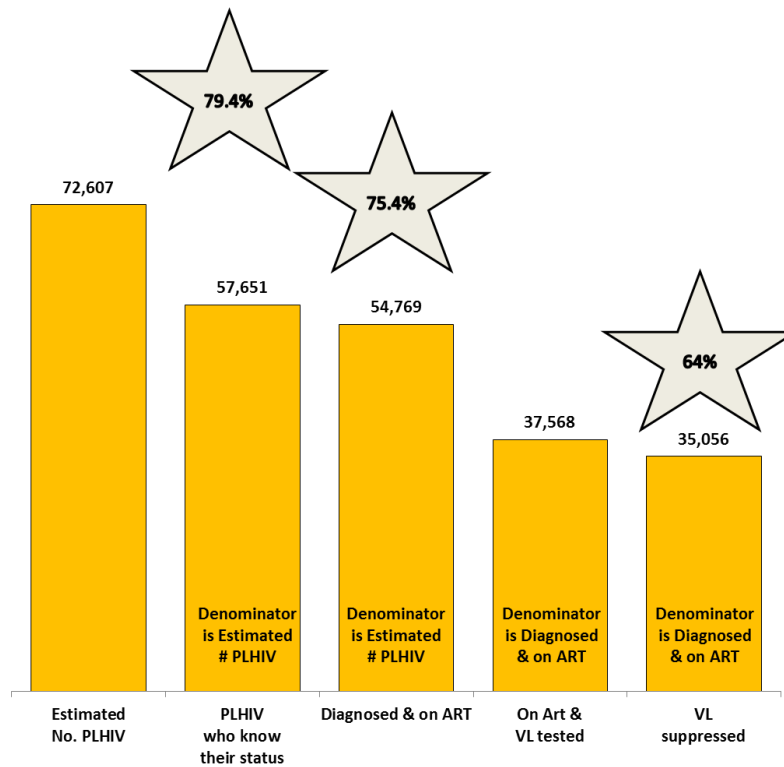


Figure 2 The care and treatment cascade for Cambodia: Status in 2015<sup>17</sup>



<sup>17</sup> Data from NCHADS DMU 2015 reports & UNAIDS Spectrum AIM using 2015 data  
Graph is representative and does not demonstrate direct relationships

UNAIDS has set global targets of 90-90-90 by 2030. Cambodia has made substantial progress towards reaching all three (Figure 1)<sup>18</sup> and it is well placed to achieve these 90-90-90 targets by 2020. In 2015 the number of PLHIV who know their status was estimated at 79.4%, the number of PLHIV who know their status and were on ART was 75.4%, and PLHIV with suppressed viral load was recorded at 64% (Figure 2). Under the Cambodia 3.0 strategy, the use of B-IACM-PNTT and screening of key populations will help Cambodia reach the first 90%; implementation of the 'Test and Treat' policy will realize of the second 90% and the installation of a third viral load machine in Siem Reap should assist in reaching the third 90%.

In light of the declining HIV prevalence in Cambodia and taking into account the considerable reduction in funding from donor partners, the Asian Epidemic Model (AEM) was updated in 2016 to model different scenarios in relation to achieving the 90-90-90 targets by 2020. Table 2 shows the corresponding key populations, year surveyed and size estimates used for the modeling process.

Integrated Bio-Behavioral Sentinel Surveys (IBBS) cover Men who have Sex with Men (MSM), Female Entertainment Workers (FEW), Transgender (TG) and People Who Use Drugs/People Who Inject Drugs (PWUD/PWID). The Surveillance Unit of NCHADS plans to undertake an IBBS for PWUD/PWID in 2017 and for MSM in 2018. An IBBS for TG was completed as part of the USG funded Flagship program in collaboration with the Surveillance Unit of NCHADS in early 2016, and a report is currently under development. A further IBBS also in 2016 will provide updated information for FEW populations. FEW are categorized under the IBBS as either venue (risk) or non-venue based (higher risk).

Data from the 2011 STI Sentinel Surveillance Survey (SSS) – which is now incorporated as part of the IBBS - showed that prevalence among Female Sex Workers (FEW) who reported having more than 7 male clients per week was 14%, while the prevalence among those who reported having 7 clients or less per week was only 3.6%. Among ANC clients, prevalence had dropped from

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<sup>18</sup> WHO 2015 Consolidated SI Guidelines for HIV p.35

<http://www.who.int/hiv/pub/guidelines/strategic-information-guidelines/en/>

There are several methods to assess progress towards the second 90%. However WHO recommends that if the estimated number of PLHIV diagnosed is considered unreliable, then the second 90% should be calculated using PLHIV rather than PLHIV diagnosed as the denominator. Therefore, 81% is the actual target for the second 90%.

0.7% in 2006 to just 0.4% in 2010. In 2010 an analysis of condom use found high levels of consistent condom use - 81.5% among FEW who reported having 2 or fewer partners per day, and 89.2% among FEW with more than 2 partners per day. The percentage of moto-taxi drivers, a 'bridging' marker group, who reported buying or using commercial sex declined in 2010; when they did buy sex, condom use was in the high 80%. Prevalence among MSM in 2014 was estimated as 2.3%.

*Table 2 Key Population size estimates*

Key Population (KP)	Year of survey	Source	Estimated HIV+ prevalence	Population estimate <sup>19</sup>
Female Entertainment Workers (FEW) (>7 clients per week)	2011	SSS	14.0%	34,000
Female Entertainment Workers (FEW) (<7 clients per week)	2011	SSS	3.6%	
Men who have Sex with Men (MSM)	2014	IBBS	2.3%	20,000
People Who Inject Drugs (PWID)	2012	IBBS	24.8%	1,300
Transgender people (TG)	2013	IBBS	9.8%	3,000
Inmates/detainees	2015	Prison records	Unknown	17,522

Twenty-three out of the twenty-five provinces has a prison, with an additional four correctional centers operating throughout the country. The total prison population based on prison records in 2015 was 17,522 inmates.<sup>20</sup> In the ten prisons where the FHI-360 provided services in 2015 it was reported that the population from January to September was estimated to be 5,827 with 92 inmates confirmed HIV positive (1.58%).<sup>21</sup>

As part of the Cambodia 3.0 initiative<sup>22</sup> NCHADS produced a series of Standard Operating Procedures (SOP) that described the process to implement the core

<sup>19</sup> UNAIDS GARPR report Cambodia 2016

<sup>20</sup> Standard Operating Procedures Standard Operating Procedures for HIV, STI and TB-HIV Prevention, Care, Treatment and Support in Prisons (and Correctional Centers) in Cambodia, Ministry of Interior and Ministry of Health, January 2012

<sup>21</sup> CC3, Kg Cham, Kg Speu, Takeo, Kampot, Prahsihanuk, Kandal, Prey Veng, Svay Rieng, Koh Kong

<sup>22</sup> Conceptual Framework for Elimination of New HIV infections in Cambodia by 2020, NCHADS, MOH, Dec. 2012

strategies in order to locate, test, treat, and then ensure that PLHIV are retained in the HIV care cascade (Figure 3). These core strategies are based on the specific characteristics of HIV cases, and how they are likely to enter the HIV cascade. An overview of the strategies and how they relate is shown in Figure 4.

**Boosted Continuum of Prevention, Care and Treatment (B-COPCT)** is a strategy which focuses on tracking key populations from outreach through the whole HIV cascade.

**Boosted Linked Response (B-LR)** is the national strategy to better coordinate existing ANC and related services for pregnant women and their infants to eliminate mother-to-child transmission of HIV and syphilis (eMTCT).

**Boosted Continuum of Care (B-COC)** is the broad strategy for on-going services delivered to PLHIV including quality of care.

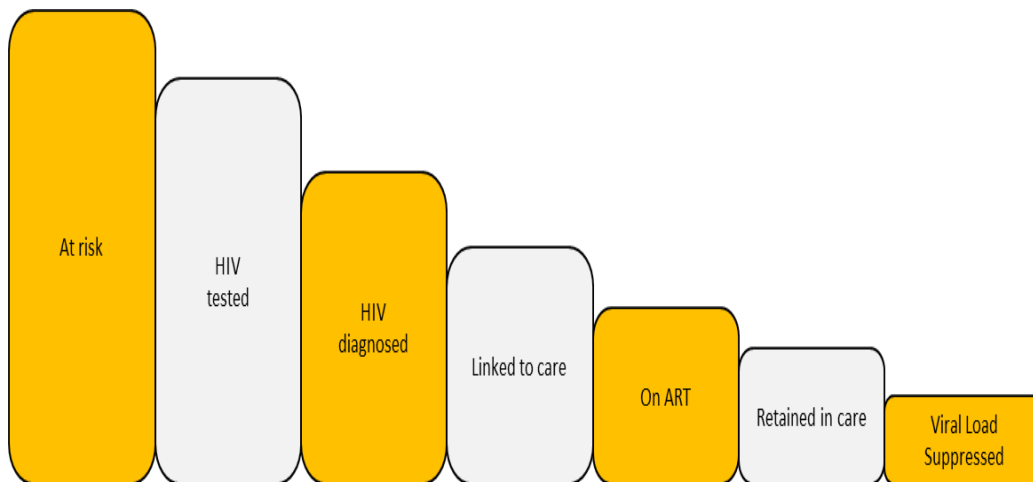
**IRIR** *Identify, Reach, Intensify, Retain* is the main operational strategy for Boosted-Integrated Active Case Management (B-IACM) to locate new HIV cases, reach them with HIV services, provide referrals and then retain PLHIV within the ART program to achieve viral load suppression. It applies to all partners working with key populations and other partners working in the general community to both retain PLHIV in care, and to identify undetected HIV infections (e.g. old, or drop-outs) among *Other Targeted Populations* to deliver HTC and referral to care. For IRIR to work effectively, NCHADS with implementing partners must ensure that the geographical coverage servicing key populations or *Other Targeted Populations* is complete and coordinated.

**B-IACM-PNTT** operates across the three main components (B-COPCT, B-LR and B-COC) and emphasizes the increased use of data to guide activities through the use of case managers to follow individuals throughout the HIV cascade. Underpinning B-IACM-PNTT is the concept of a case-based tracking system with regular follow-up and analysis across the cascade. From late 2013 to 2015 this IACM-PNTT was implemented in 14 high burden OD. As Cambodia enters the final phase 2015-2020 of the Cambodia 3.0 strategy, the reduction of

donor financing since 2015 has meant ‘doing more, and better, with less.’<sup>23</sup> As a result and consistent with the operational strategy to ‘Identify, Reach - Intensify and Retain’ (IRIR), Integrated Active Case Management was renamed Boosted IACM-PNTT (B-IACM-PNTT), and made more streamlined and cost effective.

In 2015, B-IACM-PNTT was piloted in two OD in Siem Reap and Battambang provinces. An evaluation in 2016<sup>12</sup> showed preliminary data with an increased number of HIV confirmed cases in Q4 2015 compared to Q4 2014 both in Siem Reap (from 45 to 66) and in Battambang (from 6 to 45). These encouraging results and the strong understanding and collaboration observed between Provincial Health Departments, OD, local NGOs, and key support partners suggest that B-IACM-PNTT is a workable solution towards virtual elimination<sup>24</sup> of new HIV infections in Cambodia by 2025.

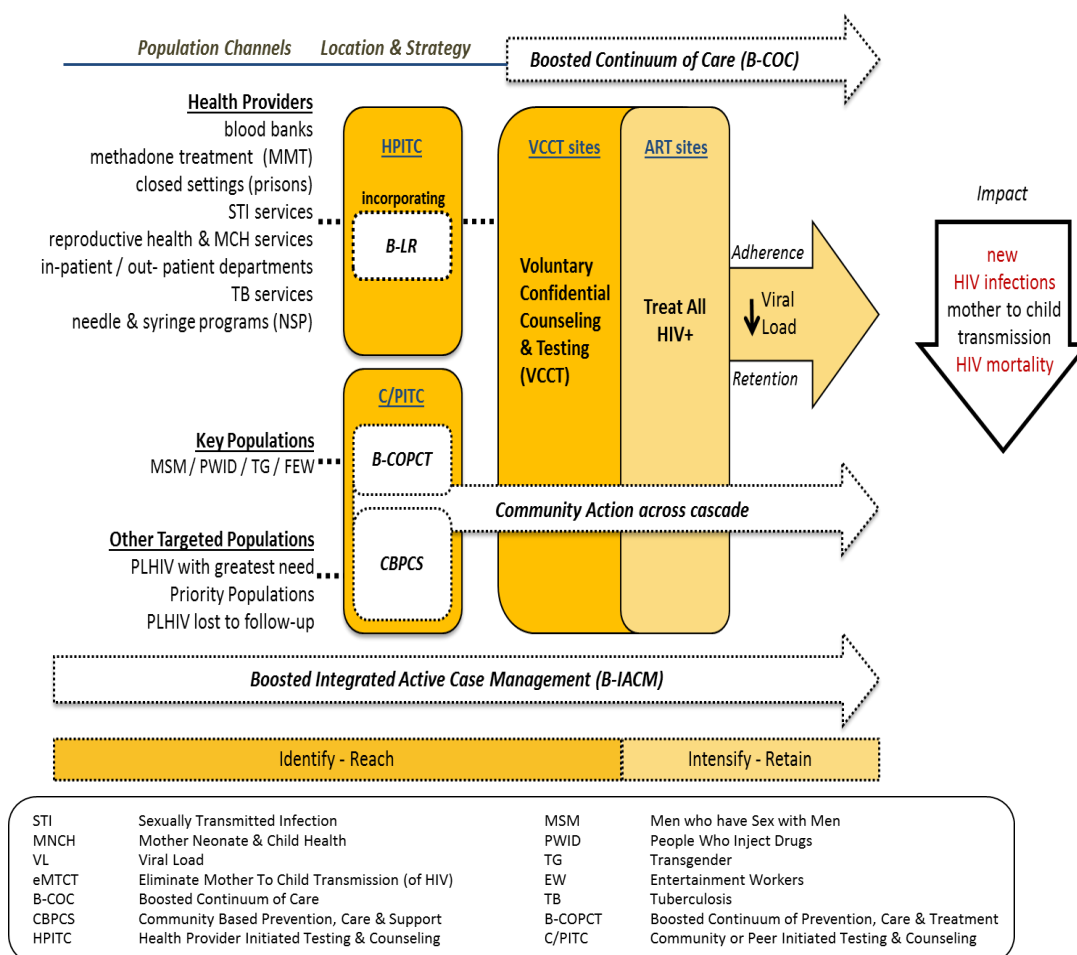
*Figure 3 Key steps along the HIV Cascade of Care*



<sup>23</sup> Vun, MC. December 2012. Cambodia at the Forefront. In *Applying a Strategic Investment Approach to its AIDS Response*, MOH of Cambodia Meeting of UNAIDS Programme Coordinating Board, Geneva, Switzerland.

<sup>24</sup> Defined as <400 new infections/year for Cambodia population of 15 mil

Figure 4 HIV interventions along the HIV cascade of care



### A.3 PLANNING DOCUMENTS

This Strategic Plan for HIV in the health sector feeds into the overall Health Sector Strategic Plan 2016-2020 (HSSP-III) developed by the Ministry of Health. The non-health elements of the national response in Cambodia, such as cultural, gender, legal and socio-economic issues are incorporated into the National Strategic Plan (NSP-IV)<sup>25</sup> developed by the National AIDS Authority (NAA). Existing Concept Notes, Guidelines and Standard Operating Procedures used for the writing of this Strategic Plan are described below:

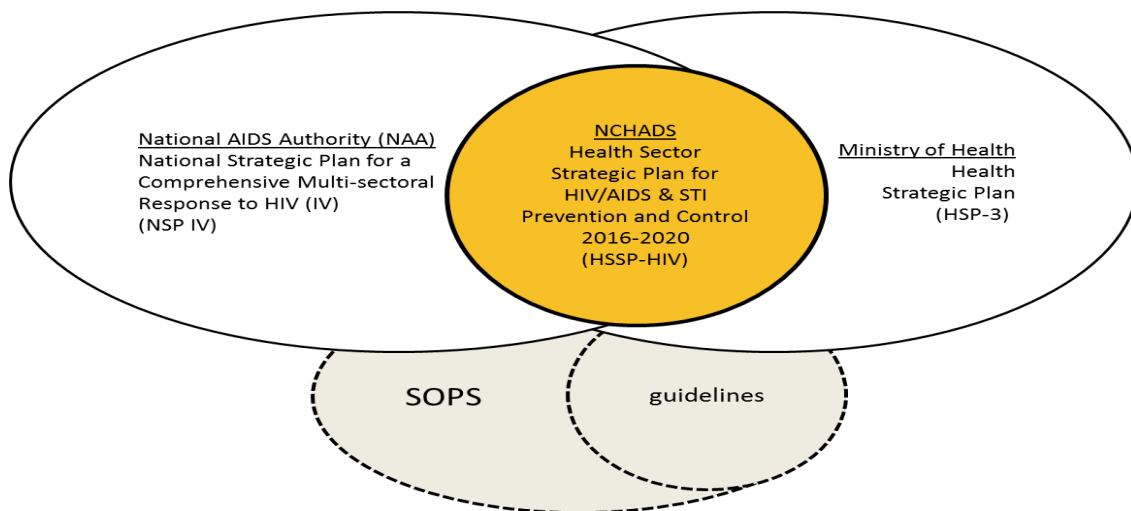
- Community Based Prevention, Care & Support (CBPCS) Concept Note (Nov 2015)
- Conceptual Framework for Elimination of New HIV infections in

<sup>25</sup> NAA: 2015 National Strategic Plan for a Comprehensive Multi-sectoral Response to HIV (NSP-IV)



- Cambodia by 2020, NCHADS-MOH (2012)
- Guidance Note on Integrated Active Case Management (ICAM) and Partner Tracing and HIV Testing Partner Notification Testing & Treatment (PNTT) for Cambodia 3.0 Initiative, NCHADS-MOH (2013)
  - Guidance Note Treatment as Prevention (TasP), NCHADS-MOH (2012)
  - Guidelines for Diagnosis and Antiretroviral Treatment of HIV Infection in Infants, Children and Adolescents in Cambodia (2016)
  - Guidelines: Cambodian National HIV Clinical Management Guidelines for Adults and Adolescents (2016)
  - Guidelines: National Guideline For the Prevention of Mother-to-Child Transmission of HIV and Syphilis, NMCHC (2016)
  - SOP Boosted Continuum of Prevention, Care & Treatment (COPCT), NCHADS-MOH (2013)
  - SOP Boosted Continuum of Care (B-COC)
  - SOP Boosted Integrated Active Case Management (B-IACM-PNTT) incorporating IRIR, Rapid Monitoring and Analysis for Action (RMAA) and Payment for Results (P4R), draft (2016)
  - SOP Boosted Linked Response (B-LR), NCHADS-MOH (2013)
  - SOP NCHADS QC Sampling Plan (draft 2016)
  - SOP Procurement, based on MEF Procurement Guidelines (2012)<sup>26</sup>

*Figure 5 Relationship between national planning documents*



<sup>26</sup> <http://www.mef.gov.kh/documents/shares/investment/pm-vol-1-sub-decree-rev-8-june-2012.pdf>  
<http://www.mef.gov.kh/documents/shares/investment/pm-vol-2-sub-decree-rev-8-june-2012.pdf>

## A.4 CHALLENGES

The Joint Mid-Term Review of the health sector strategy in 2013 acknowledged the significant progress Cambodia has made in tackling the epidemic. The review concluded that Cambodia was on track to achieve its 2015 objectives as well as the ambitious goal of the virtual elimination of new HIV infections in the country by 2025. But in spite of the level of commitment and significant achievements for prevention, care and treatment of HIV in the health sector - a number of key challenges were identified as following: <sup>27</sup>

- The need to sustain structures, capacities and services dedicated to HIV and STI prevention, care and treatment, and the early diagnosis and treatment of HIV/TB co-infection.
- Better access to services by the most vulnerable and key affected populations in a supportive legal and policy environment
- Stronger follow-up along the cascade of services; from creation of, and demand for, voluntary HIV testing and counseling to sustained and efficiently monitored use of care and treatment, devoting particular attention to gender issues, age, and key affected populations.
- Sharper epidemiological targeting and more effective interventions at sufficient intensity and scale; identifying the few new HIV infections and introducing earlier treatment to harness the dual benefit of mortality reduction and prevention of further spread among those at highest risk
- Greater cooperation between the health sector and other development sectors.

Boosted Continuum of Prevention, Care and Treatment (B-COPCT) is the first core component of this Strategic Plan and targets key populations at higher risk for new infections. This strategy also incorporates strengthening the legal environment developed by the National AIDS Authority (NAA).

Boosted Continuum of Care for PLHIV (B-COC), and Boosted Linked Response (B-LR) are the second and third components and both aim to reduce losses along the cascade. By 2015 the success of the B-LR approach via standard ANC services delivered at health facilities has meant a re-focus of this strategy by

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<sup>27</sup> WHO Joint Review of the Cambodian National Health Sector Response to HIV 2013

utilizing the Community Based Prevention, Care and Support (CBPCS) mechanism, to better locate pregnant women who are not using ANC services, to ensure they are screened for HIV.<sup>28</sup> (Refer CBPCS Component).

CBPCS has become an important point of entry into the HIV care cascade, specifically because program data now suggests that risk among key populations is highly variable and the previous broad risk categories are no longer relevant. The lowered incidence rates in Cambodia make targeting new infections particularly difficult. The largest number of new infections currently occurs among the general population: the sex partners of key populations, and even though the partners are unlikely to cause new infections themselves, it makes the tracking and treating of partners particularly important.

The Asian Epidemic Model (AEM) in 2014 and 2016 confirmed declining HIV incidence among the various sub-population groups and shows that past and current HIV programs are producing positive impact in terms of averting both new HIV infections and AIDS-related deaths. Furthermore it provides the evidence, that to reach the 2025 elimination targets Cambodia has to maintain the focus on providing HIV prevention services to key populations with varying intensity, depending on vulnerability and risk behaviors.

#### A.5 GUIDING PRINCIPLES

The Strategic Planning process has been guided by a set of principles including equity, efficiency, gender, partnership, and learning.

**Equity:** Key to the Cambodia program is to understanding HIV transmission and impact, and its relationship with the behaviors and socio-economic status of vulnerable groups. Targeting services to vulnerable groups and key populations, and ensuring they are genuinely user-centered is fundamental to Continuum of Prevention, Care and Treatment (COPCT), and Continuum of Care (COC).

**Efficiency:** The 2012 Joint Review of the program noted: “NCHADS has served as the backbone of the national response to HIV since its establishment in 1998. The strength of the structure lies in the combination of strong

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<sup>28</sup> National Guideline for the Prevention of Mother-to-Child Transmission of HIV, 3rd Edition, NMCH, Feb. 2016

leadership, use of evidence for strategic vision, Standard Operating Procedures disseminated across the health system, a well-trained and skilled staff, a streamlined chain of communication to all levels, an efficient monitoring system, and an adequate flow of financial resources.” The partnership approach adopted by NCHADS enables the program to make the best use of a wide range of interests, capabilities, skills and capacity.

**Gender:** Working closely with partners such as the Ministry of Women's Affairs (MWA) ensures all prevention and control strategies and programs are gender sensitive; it promotes health and quality of life, and protects the rights of women and men infected and affected by HIV/AIDS; All data in the program monitoring and reporting system is gender disaggregated.

**Partnership:** All aspects of the program, strategies, SOP, reviews and implementation are undertaken with the full engagement of a variety of stakeholders. A Core Working Group (or Sub-Group) provides advice for each component of the program, and this Strategic Plan has been assessed using the JANS tool (Joint Assessment of National Strategies) in a large multi-stakeholder forum.

**Learning:** NCHADS developed one of the first and most robust surveillance systems during the 1990s; it was in the forefront of the 3 X 5 Initiative, developing its own systems for mass rollout of ART.

## A.6 PROCESS OF DEVELOPMENT

The Core Group on Elimination of New HIV Infections established under the Cambodia 3.0 Initiative, comprised NCHADS, WHO, UNAIDS, UNICEF, US-CDC, USAID, CHAI, FHI-360, KHANA, PLHIV plus representative groups from key populations. The Core Group had oversight in the development of this Plan.<sup>29</sup> Various aspects were compiled and discussed at a national consultation meeting in October 2014 and the Joint Assessment of National Strategies (JANS) tool<sup>30</sup> was employed to assess the strengths and weaknesses of the strategy.<sup>31</sup>

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<sup>29</sup> *Conceptual Framework for Elimination of New HIV Infections in Cambodia by 2020*, NCHADS Dec 2012

<sup>30</sup> <http://www.internationalhealthpartnership.net/en/tools/jans-tool-and-guidelines/>

<sup>31</sup> *Report of the National Consultation on the Health Sector Strategic Plan for HIV/AIDS and STI Prevention and Control in Cambodia 2015-2020*, NCHADS, November 2014

This workshop was attended by over one hundred participants, including PLHIV, representatives of key populations, national, provincial and district level health staff, development partners, and representatives from other sectors. Results for the JANS tool were scored from 1 (weak) to 5 (very strong) and are shown in Figure 6. Stakeholder inputs on the draft for the strategic plan for prevention, care and treatment for HIV/AIDS and STI (2016-2020) were compiled, and the weaknesses identified by the JANS process were addressed<sup>32</sup> with a final draft circulated to all stakeholders. By 2015, as a result of the significantly reduced commitments by key donors to the overall program, this Strategic Plan was reassessed and B-IACM, CBPCS and other strategies were streamlined and realigned to introduce more cost effective and efficient mechanisms to find and retain HIV cases along the HIV cascade.

Figure 6 Scoring the Strategic Plan with the JANS tool



<sup>32</sup> Refer Annexes 3 & 4, Report of the National Consultation on the Health Sector Strategic Plan for HIV/AIDS and STI Prevention and Control in the Health Sector in Cambodia 2015-2020, NCHADS, November 2014

## B. RESULTS FRAMEWORK

### B.1 VISION

The vision of the HSSP-HIV is to reach the 90/90/90 UNAIDS targets by 2020 and the virtual elimination of new HIV infections in Cambodia by 2025 through high quality prevention, care and treatment services for HIV/AIDS and STI within the health sector.

### B.2 MISSION

The mission of the health sector response to HIV/AIDS and STI is to ensure the highest quality of HIV and STI prevention, treatment and care services to all in need.

### B.3 GOAL

Cambodia has committed to achieving 90-90-90 by 2020, the sustained reduction of HIV/AIDS-related mortality, and virtual elimination of new HIV infections by 2025.

### B.4 OBJECTIVES

To achieve this goal, this Strategic Plan has three primary objectives:

1. Reduce the estimated new HIV infections to fewer than 400 new cases per year by 2025
2. Reduce the HIV transmission rate from HIV positive mothers to their infants from 6% in 2015 to less than 5% by 2020
3. Reduce the estimated current HIV/AIDS-related mortality rate from 17.9/100,000 in 2015 to 12/100,000 in 2020

### B.5 RESULTS FRAMEWORK

This Plan follows the WHO model for Strategic Coherence (Figure 7)<sup>33,34</sup> and incorporates a Monitoring and Evaluation framework with outcome indicators accompanying each goal. These are supplemented by Annual Operational

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<sup>33</sup> Planning guide for the health sector response to HIV. WHO 2011  
<http://www.who.int/hiv/pub/guidelines/9789241502535/en/>

<sup>34</sup> <http://www.who.int/healthinfo/indicators/2015/en/>

Comprehensive Work Plans (AOCWP). Components in the Plan have been budgeted using the AEM scenario costing exercise in 2016. A summary of the core indicators necessary for tracking progress on the plan is contained in Table 3.

Figure 7 Strategic coherence between the national plans

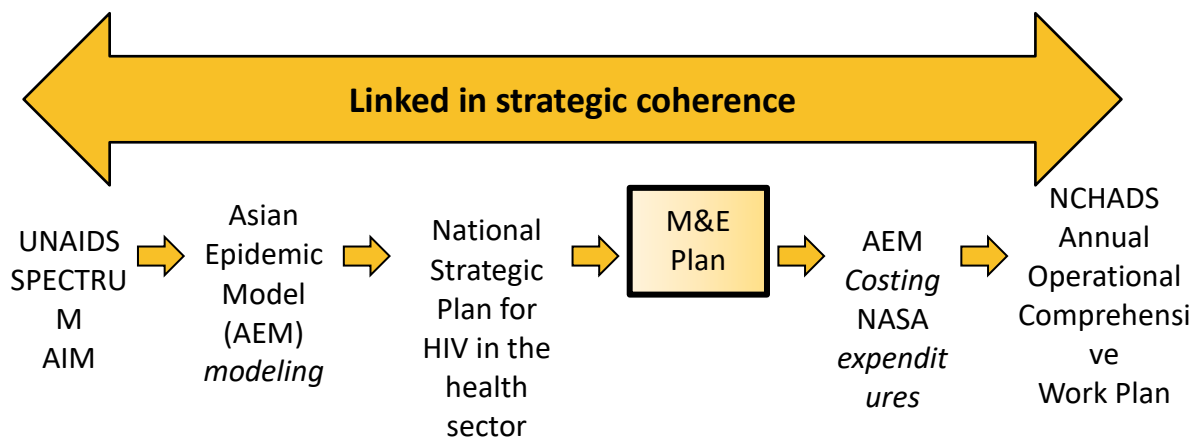


Figure 8 Results Framework for major impact and outcome results 2016-2020

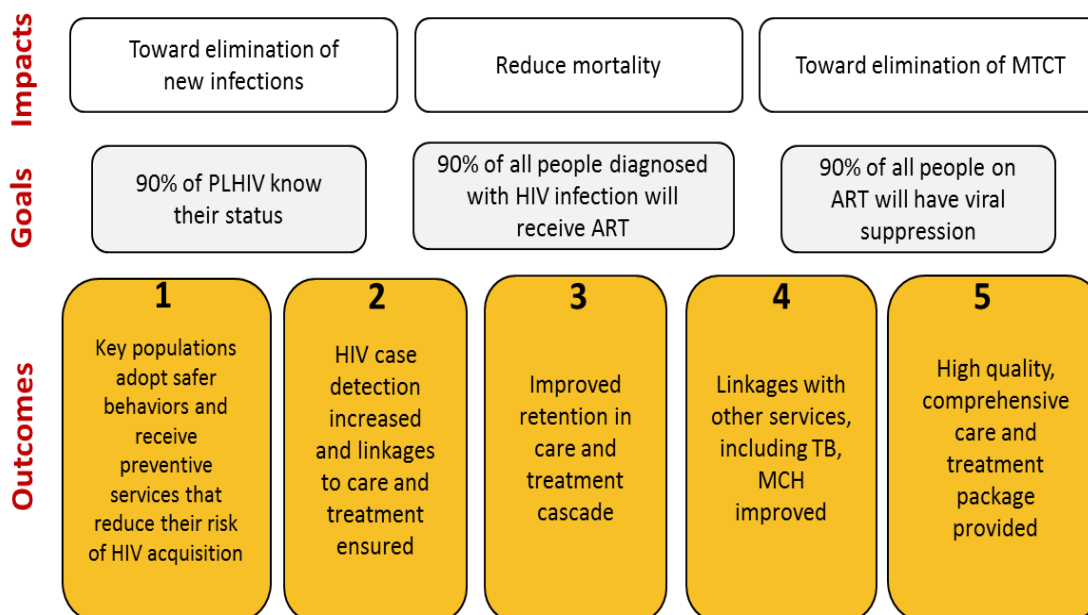


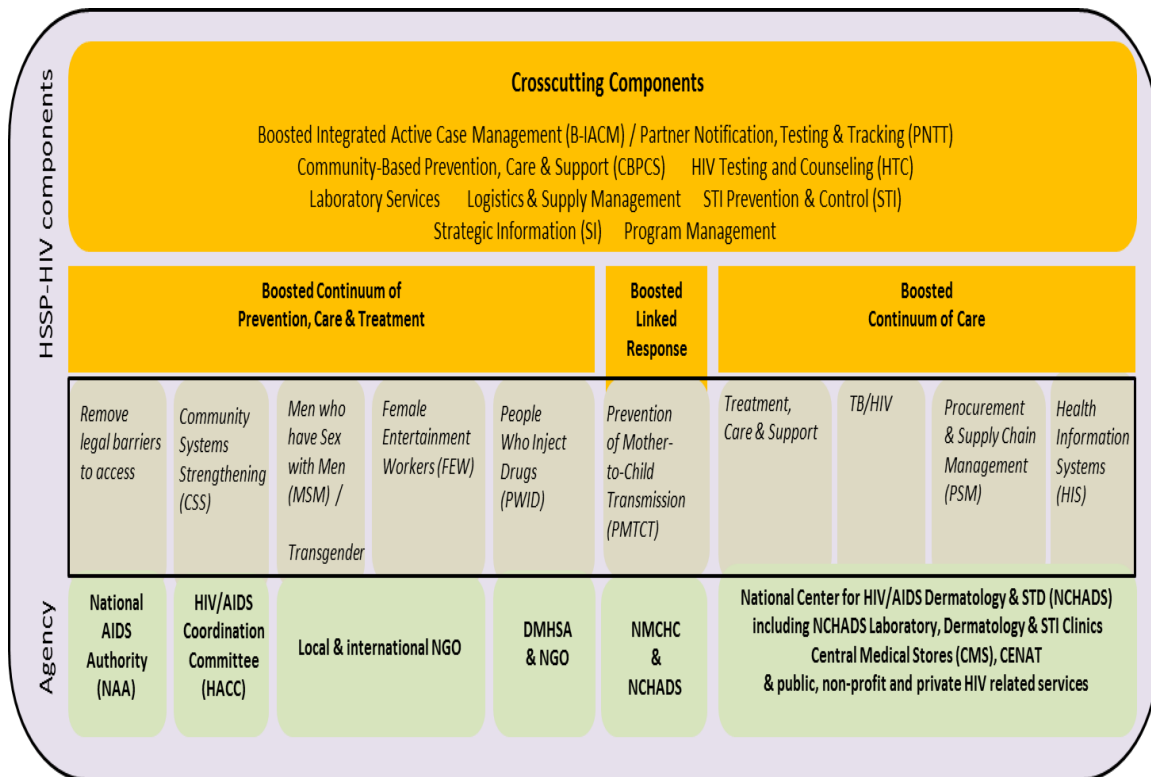
Table 3 Core indicators necessary to track progress of the Strategic Plan

<i>Result</i>	<i>Indicator</i>	<i>Target 2020</i>
<b>Impact</b>		
Eliminate new infections	Number of new HIV infections per year (per 1000 uninfected population) (= <400 new infections per year in Cambodia by 2025)	less than 0.03
Reduce mortality due to HIV/AIDS	Number of deaths due to HIV/AIDS per 100,000 population	12/100,000 or less
Eliminate MTCT	Proportion of children born to HIV-infected mothers in the past 12 months who are HIV-infected (in a breastfeeding population)	less than 5%
<b>Goals</b>		
90% of PLHIV know their status	Proportion of PLHIV who have been diagnosed	90%
90% of all people diagnosed with HIV infection will receive ART	Proportion of PLHIV who are receiving ART	90%
90% of all people on ART will have viral suppression	Proportion of people receiving ART who have suppressed viral load	90%
<b>Outcome Indicators (1-5)</b>		
<b>1</b> Key populations adopt safer behaviours and receive preventive services that reduce their risk of HIV acquisition	<b>1.1</b> Proportion of key populations reporting the consistent use of a condom with a client at last sex	FEW >95%
	<b>1.2</b> Percentage of high risk key populations who received STI services in the last quarter (disaggregated by key population group)	FEW>80% MSM>80% TG>80%
<b>2</b> HIV case detection increased and linkages to care and treatment ensured	<b>2.1</b> Percentage of individual high risk key populations who received HIV testing in the last semester (disaggregated by key population group)	FEW>90% MSM>90% TG>90%
	<b>2.2</b> Percentage of pregnant women who know their HIV status	90%
<b>3</b> Improved retention in care and treatment cascade	<b>3</b> Proportion of adults and children on ART at 12 months after initiating treatment	>90% adult >95% child
<b>4</b> Linkages with other services, including TB, MCH improved	<b>4.1</b> Percentage of HIV-positive patients who were screened for TB in HIV care or treatment settings	85%
	<b>4.2</b> Percentage of new HIV-positive patients starting Isoniazid Preventive Therapy (IPT) in the past 12 months	75%
<b>5</b> High quality,	<b>5.1</b> Percentage of HIV-infected pregnant women	>90%



comprehensive care and treatment package provided	provided with ARV drugs to reduce the risk of mother-to-child transmission during pregnancy and delivery in the past 12 months	
	<b>5.2</b> Proportion of infants born to HIV-infected women provided with ARV prophylaxis to reduce the risk of early mothers-to-child-transmission in the past 12 months	>90%

Figure 9 HSSP-HIV Core & Cross cutting Components 2016-2020



## C. STRATEGIC COMPONENTS

### C.1 CONCEPTUAL FRAMEWORK

This Strategic Framework comprises eleven components: three core components and eight cross-cutting components:

#### Core components

1. The B-COPCT aims to identify and reach new infections and ensure they are brought into and retained in treatment, and has a specific focus among key populations
2. The B-COC targets those already in treatment
3. The B-LR targets the elimination of new infections among children, while addressing the needs of their mothers

#### Cross-cutting components

4. Boosted Integrated Active Case Management (B-IACM)
5. Community-based Prevention, Care and Support (CBPCS)
6. HIV Testing and Counseling (HTC)
7. Laboratory services
8. Logistics & Supply Management
9. STI Prevention and Control
10. Strategic Information
11. Program Management

## C2. Core Components

### Core Component 1: BOOSTED CONTINUUM OF PREVENTION, CARE AND TREATMENT (B-COPCT)

#### Rationale

The Boosted Continuum of Prevention to Care and Treatment (B-COPCT) strategy emphasizes prevention interventions and their links to health services including HIV testing among defined key populations believed to be at increased risk; these are Female Entertainment Workers (FEW), Men who have Sex with Men (MSM), Transgender persons (TG) People Who Inject Drugs (PWID) and people in prisons.<sup>35</sup> Risk within these populations is highly variable. As a result, many people categorized as a key population but at relatively low risk may have been reached and tested frequently, while others in the key population group at highest risk may have been missed.

For example, recent programmatic data from screening programs for key populations have found a much lower HIV prevalence among key populations than has been found in IBBS. These findings suggest the current outreach programs may have been covering relatively low risk populations. In addition, drop-outs of HIV positive cases have been observed between confirmatory HIV testing and ART enrolment. Recent funding proposals have addressed and prioritized the specific needs of key populations; especially those who are hard-to reach, at higher risk, engaged in overlapping risk behaviors, or who may have other factors of vulnerability.

Prioritization of this component has been as a result of:

- Identifying and prioritizing the 32 high burden OD<sup>36</sup> in which the majority of the key populations are found identified through routine mapping;
- Classifying each key population in two groups: at risk, and at higher-risk (primarily FEW with more than 7 clients per week<sup>37</sup>, PWID, and key populations engaged in over-lapping risk behaviors, such as selling sex

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<sup>35</sup> NCHADS (2012) SOP for Boosted Continuum of Prevention to Care and Treatment for Most At Risk Populations in Cambodia

<sup>36</sup> Total of 92 Operational Districts in 2016

<sup>37</sup> Based on Behavioral Sentinel Surveillance (BSS) survey 2013 and AEM 2014

and injecting drugs) and adjusting the package of services delivered during outreach to intensify efforts to reach those at higher-risk, and reduce the frequency of outreach to the other group;

- Working to identify venues at which higher-risk behavior is likely occurring (such as massage parlors or karaoke bars with rooms to which FEW and clients can retire for sex), and targeting primarily these venues to reach the higher-risk group.

## **Objectives**

1. Increase the adoption of safer behaviors by higher-risk members of key populations to reduce their risk of HIV transmission<sup>38</sup>
2. Increase HIV case detection among key populations and ensure linkages to other HIV services
3. Improve and expand referrals and linkages between HIV prevention, treatment and care, and other HIV related services for key populations

## **Core Strategies**

- 1.1 Identify key populations at higher risk and their partners using prioritization criteria
- 1.2 Generate demand for and deliver to key populations evidence-based HIV prevention (e.g. behavior change, 'Test and Treat' PEP), related services (e.g. STI, SRH) and commodities (condoms, lubricant, needles and syringes, contraceptive methods)
- 1.3 Generate demand for and provide targeted HIV counseling and testing (facility-based, community-based, and adding new testing approaches as they become available) and ensure linkage to confirmatory testing
- 1.4 Strengthen referral mechanisms from prevention to treatment and care and related services, including STI screening and treatment, family planning, PEP and harm reduction services for PWID

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<sup>38</sup> Key Populations (KP) include FEW, MSM, TG, PWID

## Core Activities

### **1.1 Identify key populations at risk, and at higher risk, and their partners using the prioritization criteria developed**

- 1.1.1 Refine and finalize the criteria for prioritizing the identification and segmentation of key populations for the intensified package of services
- 1.1.2 Apply mapping and micro-planning processes to identify OD, individuals, networks, as well as venues and hotspots to be targeted for different levels of service
- 1.1.3 Use proven and innovative approaches (e.g. peer-driven, snowball, incentivized referrals, etc.), including the Rapid Monitoring and Analysis for Action (RMAA) mechanism, for immediate action to minimize losses along the cascade for HIV care and treatment
- 1.1.4 Identify high-risk partners of higher-risk key populations through partner notification, tracing and testing

### **1.2 Generate demand for and deliver to key populations evidence-based HIV prevention (e.g. behavior change, 'Test and Treat', PEP) related services (e.g. STI, SRH) and commodities (condoms, lubricant, needles and syringes, contraceptive methods)**

- 1.2.1 Conduct targeted outreach, according to the prioritized packages of services: Behavior Change Communication (BCC), condom distribution, and service referrals; in prioritized sites provide HTC (Refer HTC Component 6).
- 1.2.2 Generate demand for and deliver community and facility-based STI screening and treatment, SRH services, including family planning, and other relevant services (e.g. hormone therapy for transgender individuals) according to prioritization criteria.
- 1.2.3 Use prevention technology as available for HIV prevention (e.g. PEP) for occupational needle injuries and sexual violence.

1.2.4 Provide information and services, and make referrals targeting key populations according to prioritization criteria.

1.2.5 Use condom peer-to-peer sales and commercial market engagement.

1.2.6 By collaborating with relevant stakeholders and harm reduction implementing agencies, ensure key population in prison settings have access to HIV prevention and other relevant services.

***1.3 Generate demand for and provide targeted HIV counseling and testing (facilities-based, community-based, and adding new testing approaches as they become available) and ensure linkage to confirmatory testing***

1.3.1 Implement the IRIR operational strategy for key populations to generate demand for and provide community-based lay counselor delivered HTC using targeted strategies.

1.3.2 Promote self-referral to HTC at health facilities and promote/deliver new testing strategies, as available.

1.3.3 Implement B-IACM to follow up HIV reactive key population cases for confirmatory testing under the B-IACM approach and IRIR operational strategy.

1.3.4. Implement the 'Test and Treat' approach for all positive cases according to current adult clinical HIV guidelines

***1.4 Strengthen referral mechanisms from prevention to treatment and care and related services, including STI screening and treatment, family planning, PEP and harm reduction services***

1.4.1 Establish referral networks for HIV and related services in priority OD to ensure the referral system is functioning (from community to health facilities and vice-versa, as well as other related services).

- 1.4.2 Undertake B-IACM to follow up reactive cases (both HIV and STI) for confirmatory testing and treatment.
- 1.4.3 Ensure entry into care and treatment services for all HIV positive key population individuals based on the Test and Treat approach.
- 1.4.4 Ensure services and commodities are available to key populations in priority OD (e.g. HTC, STI, NSP, MMT, PEP) in collaboration with harm reduction implementers, as needed.

## Core Component 2: BOOSTED CONTINUUM OF CARE (B-COC) FOR PLHIV

### Rationale

The introduction of B-COC in 2014 has sought to improve quality and retention along the HIV care and treatment cascade as well as addressing persistent issues such as low uptake of critical diagnostic services, late initiation on ART, and heavy health worker caseloads. B-COC aims to provide PLHIV a comprehensive care and treatment package and improve linkages with community based care, health facility based care, as well as MMM and other programs, including TB and MCH services. B-COC also strives to make more effective use of Health Equity Funds (HEF) for patient and facility reimbursement.

Boosted-COC has a renewed focus on the HIV care and treatment cascade with a goal to expand HIV case detection, accelerate enrolment in care, and maximize retention along the cascade in combination with B-IACM utilizing the IRIR operational strategy for key populations and Community Based Prevention, Care and Support (CBPCS) to retain PLHIV in care, and maintain viral load suppression.

Based on studies confirming the effectiveness of early initiation of Antiretroviral Therapy (ART) WHO guidelines state (2015) all HIV positive patients should be immediately initiated on ART regardless of CD4 count.<sup>39,40</sup> NCHADS recently incorporated this 'Test and Treat' policy in the 2016 HIV guidelines.<sup>41</sup> B-COC also includes expansion of regular voluntary notification, tracing and testing of both PLHIV and their sexual and drug use partners.

According to HIV-TB co-infection guidelines and 3I's SOP<sup>42</sup> B-COC will also ensure appropriate management of HIV-TB co-infected patients. In addition, following WHO Global and Regional Hepatitis Strategy<sup>43</sup> and associated WHO

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<sup>39</sup> 'Early initiation' was defined in this study as immediate enrolment on therapy for HIV-1 infected patients with CD4 count between 350 and 500/mm<sup>3</sup>.

<sup>40</sup> Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection, WHO policy brief, Nov. 2015, What's New? [http://apps.who.int/iris/bitstream/10665/198064/1/9789241509893\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/198064/1/9789241509893_eng.pdf?ua=1)

<sup>41</sup> Revised Adult HIV clinical guidelines MoH, 2016

<sup>42</sup> Standard Operating Procedures (SOP) for Implementing the Three I's in Continuum of Care (CoC) Settings, NCHADS Apr. 2010

<sup>43</sup> WPRO Regional Action Plan for Viral Hepatitis in the Western Pacific 2016–2020, WHO 2016



guidelines<sup>44</sup> NCHADS is willing to address Viral Hepatitis B or C (HVB/HVC) and HIV co-infections. A 2014 Cambodian study<sup>45</sup> showed that these HVB/HVC infections represent an important challenge for the HIV program as the prevalence of HVB and HVC among PLHIV have been reported to be 11% and 5.3%, respectively. The recent development of Directly Acting Antiviral Agents (DAA) drugs against HCV and the possibility of collaboration with key partners make it possible to use existing HIV structures to address HCV-HIV co-infection.

## **Objectives**

1. To improve and maintain quality, coverage, and retention at all steps of the HIV cascade in the Continuum of Care

## **Core Strategies**

- 2.1 Increase HIV case detection, and accelerate enrolment in ART care.
- 2.2 Provide a high quality, comprehensive care and treatment package.
- 2.3 Maintain retention in care along the HIV cascade, and improve linkages to community-based care, health facility based care, MMM and other services, including TB, MCH.
- 2.4 Streamline HIV care and treatment services without compromising quality of care.

## **Core Activities**

### **2.1 Increase HIV case detection, and accelerate enrolment in care**

- 2.1.1 Refer HTC component for expanded case detection through rapid testing at health centers, outreach, and POC/IPD to find new HIV cases.

### **2.2 Provision of a high quality, comprehensive care and treatment package**

- 2.2.1 Implement current national HIV clinical guidelines<sup>46</sup> to expand access and coverage of ART.
- 2.2.2 Improve access to viral load and CD4 testing according to the current national HIV guidelines.

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<sup>44</sup> WHO Guidelines for the screening care and treatment of persons with chronic hepatitis C infection, WHO April 2014 and Updated new recommendations, WHO policy brief 2016; Guidelines for the prevention, care and treatment of persons with chronic hepatitis B infection, WHO, March 2015

<sup>45</sup> van Griensven J. et al, PLOSone February 2014, Vol. 9:e88552

<sup>46</sup> Revised Adult HIV clinical guidelines, MoH Aug. 2016

- 2.2.3 Manage HIV co-infections (TB, HCV, HCB etc.) including referral to appropriate services.
- 2.2.4 Implement the SOP for HIV activities in prisons and closed settings<sup>47</sup>
- 2.2.5 Reinforce detection, monitoring and management of ARV adverse events through pharmaco-vigilance
- 2.2.6 Improve case management (including regimen selection and appointment schedule).
- 2.2.7. Improve diagnosis and management of treatment failures, including adherence and viral load confirmation.
- 2.2.8 Implement, scale up and monitor 'Test and Treat' approach according to the current HIV clinical guidelines<sup>48</sup>.
- 2.2.9 Strengthen Post-Exposure Prophylaxis (PEP) for occupational injuries and sexual assaults.
- 2.2.10 Implement clinical mentoring through clinician and counselor networks, and provide comprehensive CQI/EWI<sup>49</sup> process.
- 2.2.11 Provide Positive Prevention package, as part of family planning counseling at ART facilities<sup>50</sup>.
- 2.2.12 Improve NCD (hypertension, diabetes, dyslipidemia, etc.) detection among PLHIV and link with appropriate services at the health facility and community level according to the current HIV clinical guidelines.

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<sup>47</sup> SOP for HIV, STI and TB-HIV prevention, care, treatment and support in prisons (and correctional centers) in Cambodia, NCHADS/MoH 2012.

<sup>48</sup> Revised Adult HIV clinical guidelines MoH 2015 Aug. 2016 in preparation

<sup>49</sup> Continuous Quality Improvement / Early Warning Indicator

<sup>50</sup> Guide for implementation of Positive Prevention among PLHIV in Cambodia, NCHADS, 2010

**2.3 Maintain retention in care along the HIV cascade, and improve linkages to community based care, health facility based care, MMM and other programs, including TB and MCH.**

- 2.3.1 Reduce loss to follow-up through B-IACM and the IRIR operational strategy using appointment-tracking system for all PLHIV in treatment.
- 2.3.2 Define and expand the role of support groups such as MMM/mmm, Peer educators etc. in patient education, reducing stigma, counseling, triage and follow up.
- 2.3.3 Build the capacity of ART counselors to strengthen retention and adherence counseling.
- 2.3.4 Ensure good collaboration between HIV Program Manager and Logistic Supply Management for adequate ART supply.
- 2.3.5 Maintain national and OD-level coordination mechanisms through B-IACM approach (Refer B-IACM Component).
- 2.3.6 Improve access to, and awareness of, Health Equity Funds (HEF) for ID-Poor PLHIV to cover the transportation costs, and care and treatment service fees.

**2.4 Further streamline HIV care and treatment services without compromising quality of care**

- 2.4.1 Conduct rapid assessment to evaluate potential strategies for:
  - Transition of adolescents from PAC into adult care
  - Caseloads at ART sites
  - Differentiated ART provision for stable patients (for example by nursing staff)

### Core Component 3: BOOSTED LINKED RESPONSE (B-LR)

#### Rationale

In 2008 the Government of Cambodia initiated comprehensive interventions to reduce Mother To Child Transmission of HIV (MTCT) known as the Linked Response that depended on cooperation between HIV and Sexual and Reproductive Health (SRH) services.

In June 2011, Cambodia declared its commitment in Cambodia 3.0 to eliminating Mother To Child Transmission (eMTCT) of HIV and congenital syphilis. The Cambodia 3.0 strategy planned to avert the majority of pediatric HIV infections and congenital syphilis through implementation of a comprehensive SRH service package comprising HIV/AIDS care and treatment, maternal and child health (MCH) services, birth spacing and Positive Prevention among PLHIV, and STI prevention and treatment.

Following impressive gains, Boosted Linked Response was introduced in 2013 to reach the virtual elimination of new pediatric HIV and congenital syphilis and further improve health outcomes for mothers and children through a simplified and more efficient version of the Linked Response (Figure 10).

Based on 2015 estimations the number of HIV positive women who will become pregnant is expected to continue to decline by 2020 (Figure 13).<sup>51</sup> Approximately 84% of HIV-positive pregnant women received ARV therapy in 2015. Cambodia is therefore uniquely positioned to virtually eliminate pediatric HIV and congenital syphilis and with a coincident decrease in mortality among HIV positive children. However, Cambodia has still to strengthen the PMTCT strategy in a way that the majority of pregnant women know their HIV and syphilis infection status and receive appropriate PMTCT interventions for both diseases.

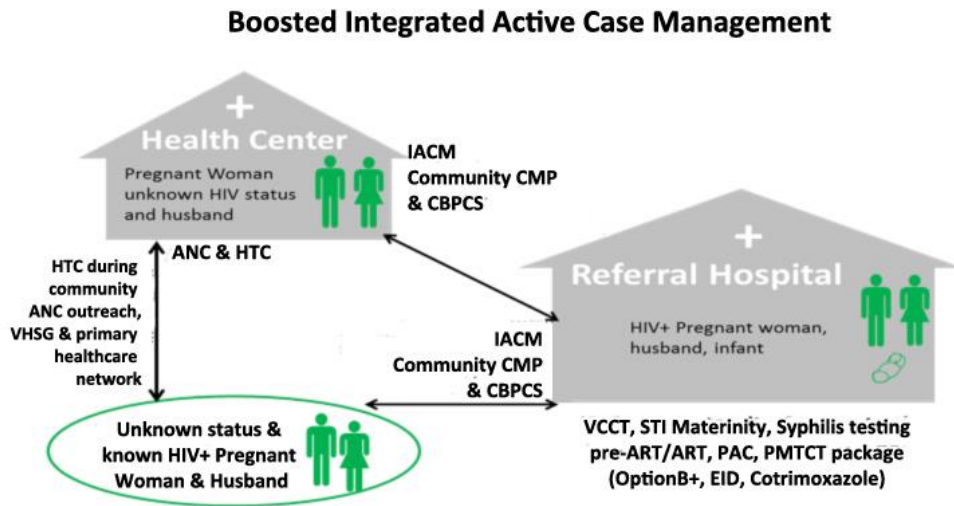
Cambodia will continue to streamline the B-LR to detect new HIV+ pregnant women; ensure that mother-baby pairs receive the full package of PMTCT

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<sup>51</sup> UNAIDS SPECTRUM AIM 2016

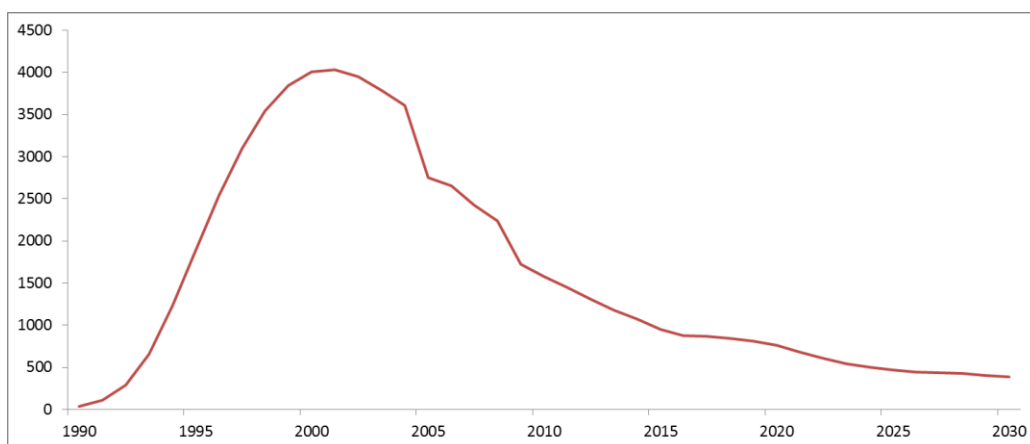
services; and accelerate the enrolment of infected infants in pediatric AIDS care using the B-IACM/PNTT approach and IRIR operational strategy at the OD level (Figure 12). (Ref B-IACM Component)

Figure 10 Boosted Linked Response Model



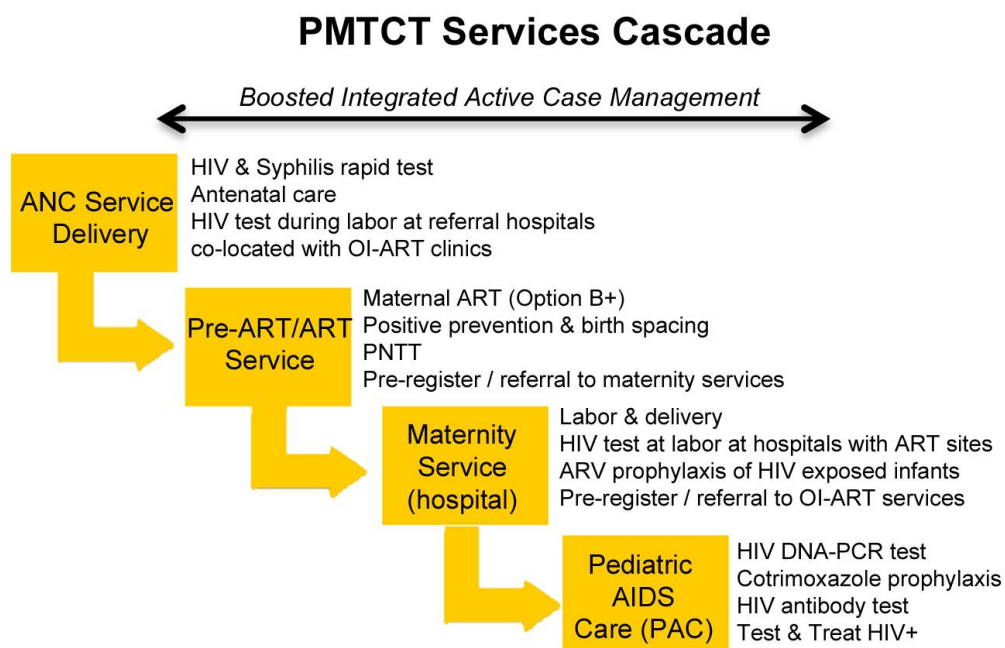
Modeling exercises conducted in Cambodia in 2014 and 2016 indicate that testing and maternal ARV prophylaxis coverage of 95% may be required to achieve elimination of mother to child transmission of HIV.

Figure 11 Projection of the number of mothers needing PMTCT (1990-2030)<sup>52</sup>



<sup>52</sup> UNAIDS SPECTRUM AIM 2016

Figure 12 PMTCT Services Cascade



### Objective

1. To improve PMTCT cascade outcomes to reach 90/90/90 goals and reduce new pediatric HIV infections in Cambodia.

### Core Strategies

- 3.1 Improve case detection of HIV positive and/or syphilis infected pregnant women to reach 90% of pregnant women aware of their HIV status.
- 3.2 Improve access to the full package of PMTCT services (Refer HTC, B-IACM Components and NMCHC strategies for PMTCT).

### Core activities

#### 3.1 Improve case detection of HIV positive and/or syphilis infected pregnant women to reach 90% of pregnant women aware of their HIV status

- 3.1.1 Achieve universal access to HIV and syphilis testing at health facilities and outreach for all pregnant women.

- 3.1.2 Strengthen HIV primary prevention efforts for women of reproductive age in partnership with, and according to NMCHC strategy,<sup>53</sup> including services for women within key populations via B-COPCT; promotion of dual birth spacing methods; and implementing the Positive Prevention SOP<sup>54, 55</sup>
- 3.1.3 Increase access to birth spacing among women living with HIV to reduce unintended pregnancies by providing options for birth spacing.
- 3.1.4 Improve early service uptake and retention of HIV and syphilis infected pregnant women throughout the care and treatment cascade through B-IACM (Refer B-IACM Component).
- 3.1.6 Improve referrals of HIV positive pregnant women to appropriate health facilities for safe delivery using B-IACM approach.

**3.2 Improve access to the full package of PMTCT services** (Refer HTC, B-IACM Components and NMCHC strategies for PMTCT)

- 3.2.1 Use B-IACM to track HIV positive pregnant women and HIV-exposed infants to strengthen linkages to EID and enrolment of newly infected children into integrated PAC services.
- 3.2.2 Leverage the CBPCS, including Village Health Support Group (VHSG) to assist mothers for transportation, access to PMTCT, and ensure that infants receive key services, including EID and cotrimoxazole. (Refer NMCHC strategy, and B-COC, CBPCS Components).

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<sup>53</sup> National Guideline For the Prevention of Mother-to-Child Transmission of HIV and Syphilis, 4th Edition, NMCH, February 2016

<sup>54</sup> NCHADS (2012) SOP for Boosted Continuum of Prevention to Care and Treatment for Most At Risk Populations in Cambodia

<sup>55</sup> Guide for implementation of Positive Prevention among PLHIV in Cambodia, NCHADS, 2010

## C.3 CROSS-CUTTING COMPONENTS

### Component 4: BOOSTED INTEGRATED ACTIVE CASE MANAGEMENT (B-IACM) & PARTNER NOTIFICATION, TESTING AND TRACKING (PNTT)

#### Rationale

B-IACM functions as a case-based surveillance system with regular tracking of cases, analysis of profiles of new cases, as well as acting as an alert system to signal potential HIV outbreaks.<sup>56</sup>

B-IACM under the IRIR approach (*Identify, Reach - Intensify and Retain*) is intended to cover the whole HIV cascade, bridging the three core components of the HSSP-HIV (B-COPCT, B-COC, B-LR), along with Community Action strategies such as Community Based Prevention, Care and Support (CBPCS).

Assessments to date suggest that the majority of newly detected cases are found in specific groups within the general population.<sup>57&58</sup> Further information about these groups will come from HIV case profiling as part of ART enrolment. However, this finding highlights the importance of engaging community based groups and networks to help identify and locate un-enrolled PLHIV cases within the general population.

Identify-Reach, Intensify and Retain (IRIR) is the operational strategy providing direction for B-IACM for identifying new HIV cases; reaching PLHIV with HIV services; strengthening referrals; intensifying access to care; and retaining all PLHIV in care to become stable by achieving a suppressed viral load.<sup>59</sup>

Spectrum-AIM and Asian Epidemiological Modeling (AEM) software estimated in 2016 around 15,000 people are infected with HIV in Cambodia who have not been yet identified or enrolled in the HIV care cascade<sup>60</sup>. But because new HIV infections were fewer than 1,000 in 2015 and are expected to steadily

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<sup>56</sup> Outline Concept Note: Integrated Case Surveillance of HIV infection in Cambodia, NCHADS, draft, July 2015

<sup>57</sup> Report on an assignment for Operationalization of the Active Case Management and Partner Notification, Tracing and HIV Testing before nationwide scale-up under the GFATM. June-December 2015, Dr. Mean Chhi Vun & Dr. Peter Godwin

<sup>58</sup> The Rapid Monitoring Analysis and Action report (October 2016)

<sup>59</sup> For details, please refer to the Consolidated SOP on Community Action Approach to Operationalize IRIR Strategy Towards achieving 90-90-90 in Cambodia

<sup>60</sup> Data from NCHADS DMU 2015 reports & UNAIDS Spectrum-AIM & AEM modeling using 2015 data

<sup>61</sup> Concept paper on Streamlining the Community-Based Prevention, Care and Support (CBPCS) Model for PLHIV in Cambodia, NCHADS, draft Nov 2015.



decrease in coming years, the approximation of 15,000 un-enrolled PLHIV cases is unlikely to grow. The B-IACM strategy aims to ensure over the next five years these 15,000 cases will be identified, enrolled, and retained in care to reach the global 90-90-90 targets set for 2020 and virtual elimination of HIV in Cambodia by 2025.

In practical terms the main differences between earlier IACM/PNTT and the current strategy for B-IACM, is to achieve the objectives of the national HSSP-HIV by making B-IACM more efficient and cost-effective with improved and appropriate responses to local conditions. To accommodate the different challenges in controlling HIV prevention and transmission in Cambodia four models have been developed for B-IACM.

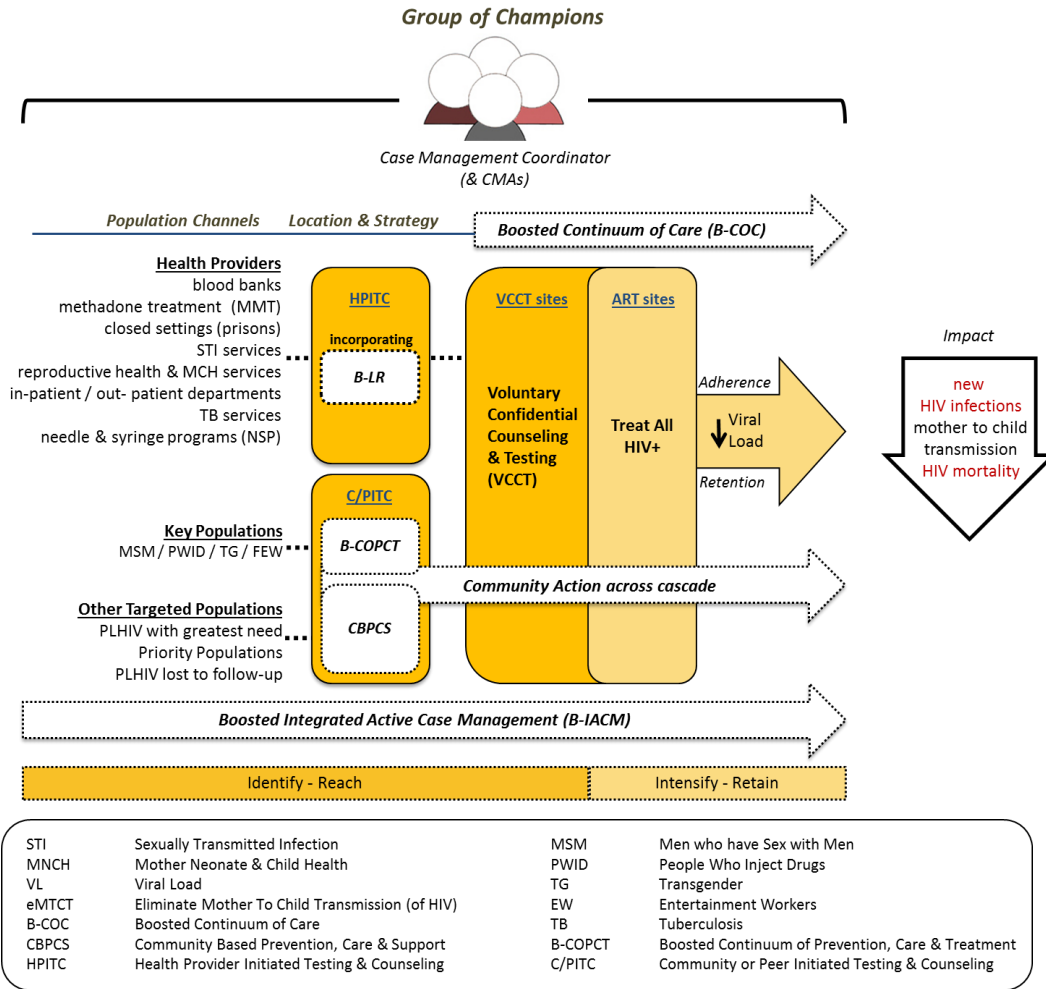
#### B-IACM Models

1. Rural OD with ART/VCCT
2. Rural OD without ART/VCCT
3. Urban OD
4. Phnom Penh

Under each of these models the previous multiple levels of TWG at the provincial and OD level are now blended into a committee structure known as the Group of Champions (GOC) convened in each OD, with a further GOC committee located at the PHD. Each of the B-IACM models will more accurately be able to identify where the estimated 15,000 un-enrolled PLHIV are likely to be, and where and how to intensify the effort needed to reach these people.

Enveloping the HIV care cascade is B-IACM coordinated through an OD Case Management Coordinator (CMC) in collaboration with the Group of Champions.

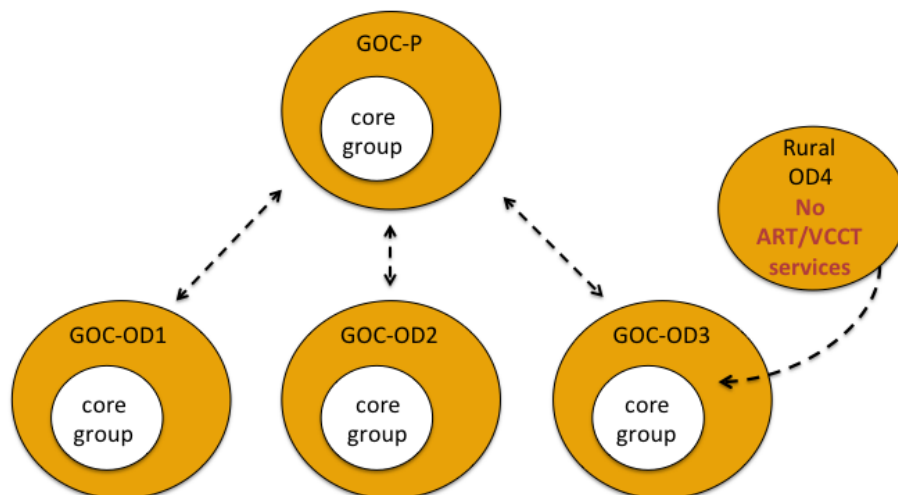
Figure 13 Group of Champions



The GOC through their core group make recommendations and provides information and advice to the PHD related the HIV program, and involves all HIV stakeholders to tackle issues affecting the local situation to both increase the number of HIV cases enrolled and to prevent loss to follow-up at each stage of the cascade.

The GOC comprises members from all stakeholders and advocacy groups involved in HIV prevention and care services particularly those involved in COC, COPCT, B-LR and Community Action initiatives including COPCT. Additional GOC members can be included as necessary contingent on their respective involvement in the OD as part of the HIV care cascade.

Figure 14 Group of Champions - Provincial & OD



## Objectives

- 1 To leverage existing strategies and approaches for case detection, early/immediate enrolment, and retention in HIV care and treatment in order to reach the 90-90-90 targets by 2020.

## Core Strategies

- 4.1 Establish enabling environment via a Group of Champions to implement and scale-up B-IACM strategies
- 4.2 Implement the IRIR operational strategy to support B-IACM and expand the approach nationwide
- 4.3 Strengthen the use of data to support B-IACM

## Core Activities

### ***4.1 Establish an enabling environment via a Group of Champions (GOC) to implement and scale-up B-IACM/PNTT strategies***

- 4.1.1 The GOC is the core group of immediately responsible people who

can manage and oversee the B-IACM directly and additional GOC members include other partners involved in the HIV cascade in the OD

- All urban OD will have a GOC while for rural OD, the need for a GOC will be decided in each province depending of the local situation like the presence of ART service or the burden of key populations
- The GOC is in charge of the direct management of B-IACM in the OD with regular review of the HIV cascade data in the OD to identify issues and find solutions for improvement.

4.1.2 Assign/employ national focal persons, CMC/CMA to provide linkages between relevant key players involved in HIV and STI prevention, care and treatment to ensure the functioning of B-IACM/PNTT.

4.1.3 Engage existing coordination mechanisms for Cambodia 3.0 Initiative to support B-IACM/PNTT and ensure regular meetings of the GOC to review data across the cascade.

#### ***4.2 Implement the IRIR operational strategy to support B-IACM and expand the approach nationwide***

4.2.1. To identify all PLHIV unaware of their status, or those PLHIV lost to follow-up among key populations, and ‘Targeted General Populations’ in the community through partners working with key populations (outreach) and the CBPCS network model.<sup>61</sup>

4.2.2. Implement the Partner Notification, Tracing and HIV Testing Guidance Note<sup>62</sup>

4.2.3. To refer and actively follow-up all HIV finger prick reactive cases to ensure all receive a confirmatory test at VCCT.

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<sup>61</sup> Concept paper on Streamlining the Community-Based Prevention, Care and Support (CBPCS) Model for PLHIV in Cambodia, NCHADS, draft Nov 2015.

<sup>62</sup> Guidance Note on Integrated Case management and Partner Tracing and HIV Testing for Cambodia 3.0 Initiative, NCHADS/MOH, Oct. 2013

- 4.2.4. To actively follow-up and ensure enrollment of all confirmed HIV cases in ART clinics.
- 4.2.5. To actively follow-up all patients newly enrolled in ART clinics to ensure early ART initiation according to current National Clinical Management and ART guidelines<sup>63,64</sup>
- 4.2.6. To implement and monitor routine viral load testing for all patients on ART according to current HIV clinical guidelines<sup>65</sup>
- 4.2.7. To monitor HIV cascade outcomes regularly at sub-national and national levels using B-IACM monitoring tools and the Rapid Monitoring and Analysis for Action (RMAA) process to minimize cases lost at each stage of the cascade and find solutions for improvement.

### **4.3 Strengthen the use of data to support B-IACM**

- 4.3.1 Establish and ensure good functioning of RMAA core group at the sub-national and national level.
- 4.3.2 Update B-IACM-PNTT recording and reporting tools including the HIV dashboard.
- 4.3.3 Provide capacity building of CMC and CMA to properly use B-IACM tools and analyze the HIV cascades at subnational level.
- 4.3.4 Introduce and expand ways to improve patient tracking to reduce Loss to Follow-Up (LTFU).
- 4.3.5 Establish LTFU monitoring mechanisms; review results after one year and propose follow up actions including qualitative assessment of LTFU.

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<sup>63</sup> Concept Note on Treatment as Prevention (TasP) as a Strategy for Elimination of New HIV Infections in Cambodia, NCHADS, December 2012

<sup>64</sup> Cambodian National HIV clinical management guidelines for Adults and Adolescents & Guidelines for Diagnosis and Antiretroviral Treatment of HIV Infection in Infants, Children and Adolescents in Cambodia, MoH 2016

4.3.6 Use data to better characterize newly HIV infected populations using appropriate tools.

4.3.7 Review and adjust B-IACM-PNTT implementation according to the lessons learned and recommendations.

## Component 5: COMMUNITY-BASED PREVENTION CARE AND SUPPORT (CBPCS)

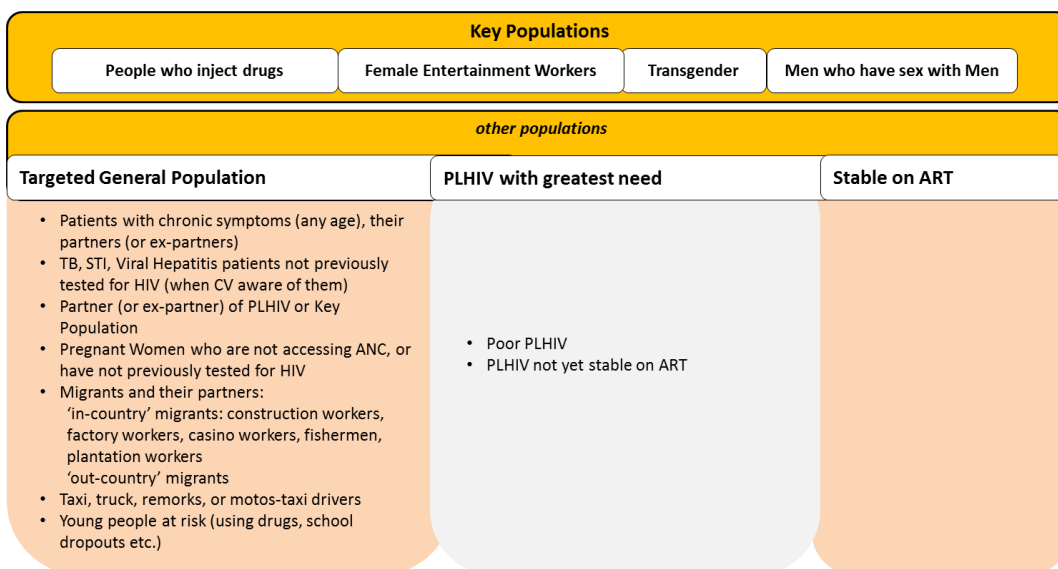
### Rationale

Over the last fifteen years, the home and community based care model in Cambodia has evolved substantially to meet the changing needs of PLHIV. During the initial phase of the epidemic and prior to the scale up of ARV treatment, the demand for Home Based Care (HBC) services was high because of the large numbers of PLHIV developing Opportunistic Infections (OI) combined with the overall limited availability and access to health services.

In 2008, NCHADS launched the SOP for Continuum of Care (COC) comprising an updated model for HBC called Community Home-Based Care (CHBC) that included establishing Mondul Mith Chouy Mith (MMM) groups at ART clinics and PLHIV self-help groups. The COC aimed to increase uptake of services by strengthening the link between community and health services for PLHIV. At the same time the responsibility of delivering HBC services moved from NGO partners to these self-help groups and PLHIV volunteers, while the NGO partners provided on-going coordination and technical support.

By 2016 the needs of many PLHIV have changed considerably as a result of their improved health status principally brought about by high ART coverage rates. In order to streamline and improve cost-effectiveness a new model CBPCS was introduced in 2015 across the HIV cascade using the B-IACM mechanism to focus resources on other *populations* identified as (i) Targeted General Populations, , (ii) PLHIV with greatest need and (iii) PLHIV lost to follow-up. These groups are monitored throughout the HIV cascade via CBPCS, while a minimal level of routine care and support is also directed toward stable PLHIV identified at the ART sites.

Figure 15 Target Populations

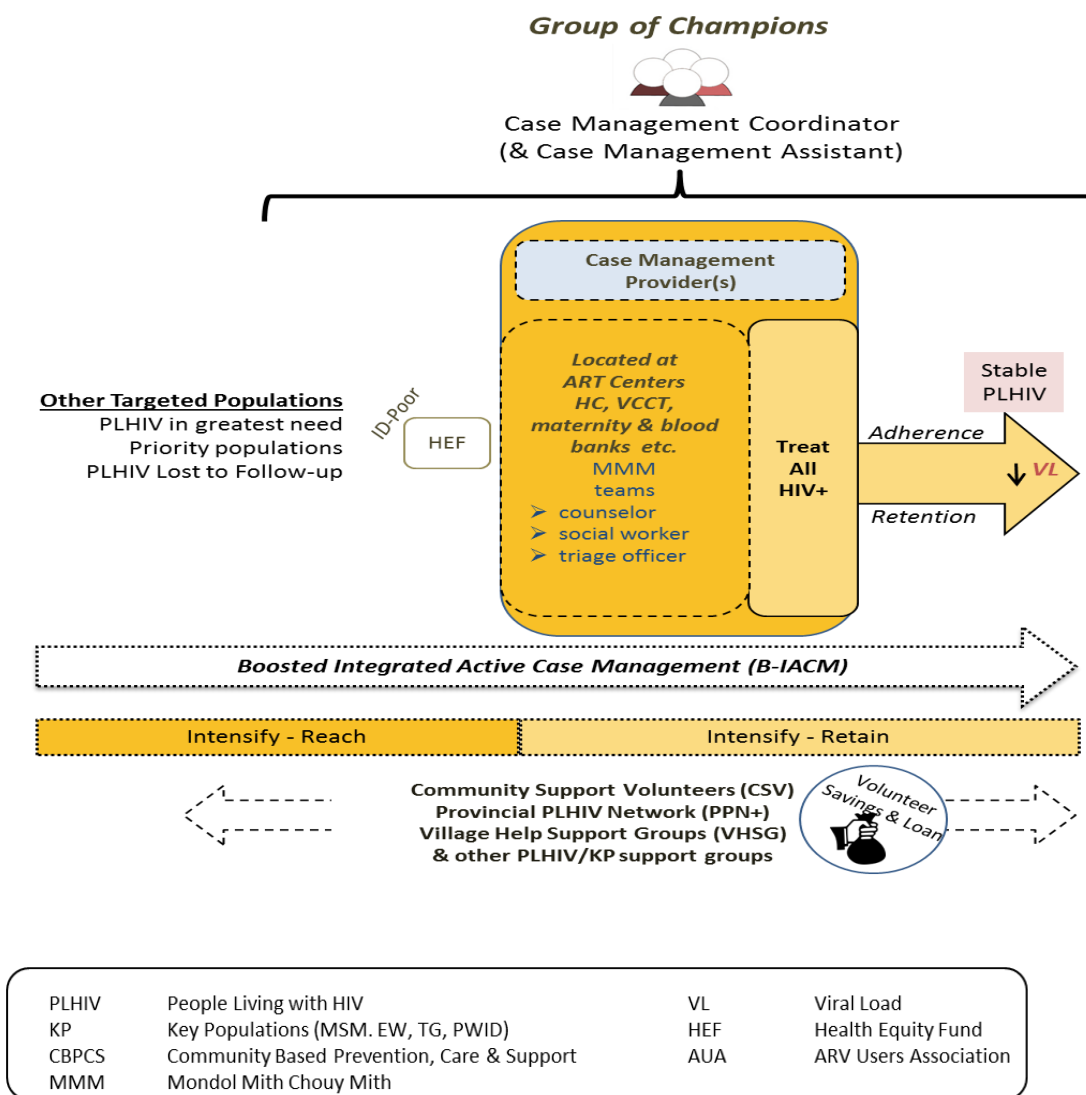


According to WHO criteria, PLHIV are considered stable on ART if they:

- have received ART for at least one year and
- have no adverse drug reactions that require regular monitoring and
- have no current illnesses and
- are not pregnant or currently breastfeeding and
- have good understanding of lifelong adherence and
- have evidence of treatment success i.e. :
  - Two consecutive viral load measurements undetectable
- In the absence of viral load monitoring, rising CD4 cell counts or CD4 counts above 200 cells/mm<sup>3</sup> with an objective adherence measure



Figure 16 Conceptual Framework of the CBPCS model



## Objective

1. To strengthen cost-effective and sustainable community-based services for increased access to, uptake of and retention in HIV prevention, care, treatment and support for PLHIV.

## Core Strategies

- 5.1 Develop and implement a package of services for PLHIV at greatest need at ART clinics and at community level.

- 5.2 Provision of short-term technical assistance to community based organizations.
- 5.3 Long-term integration of CBPCS model into primary health care.

### **Core Activities**

#### ***5.1 Develop and implement a package of services for PLHIV in greatest need at ART clinics and at community level***

- 5.1.1 Conduct rapid assessment of all ART sites to identify existing community structures and gaps, and analyze geographic and coverage data to tailor the CBPCS model to the local situation.
- 5.1.2 Develop criteria, risk-screening tools and guidance on phasing in/out PLHIV between the 'greatest need' and 'stabilized' categories.
- 5.1.3 Tailor the package of support to the specific needs of each sub-group of PLHIV at the community and facility level including Community ARV Delivery (CAD) for stable PLHIV.
- 5.1.4 Conduct orientations on the new CBPCS model for ART, CMP, MMM volunteers, CSV and OD CMC and CMA.
- 5.1.5 Develop/adapt/strengthen reporting and monitoring systems and tools for the implementation of the new CBPCS model at the community and facility level.
- 5.1.6 Provide technical support in monitoring and mentoring at each site during the initial phases of implementation.
- 5.1.7 Establish mechanism to link PLHIV with HEF to improve registration and utilization.
- 5.1.8 Establish VSL groups where none currently exist, or integrate into existing village savings cooperatives.
- 5.1.9 Establish structural network and follow up mechanisms between OD CMCs, CMAs, ART sites, MMM Volunteers and CSV.

5.1.10 Develop an integrated plan for community-based self-help groups, and transition social support to VSL groups and MMM.

5.1.11 Scale up new CBPCS model in all B-IACM implemented OD sites.

### ***5.2 Provision of short-term support to CBPCS***

5.2.1 Provide technical support in monitoring and mentoring at each site during the initial phases of implementation of CBPCS.

5.2.2 Conduct orientation training on the new CBPCS model for ART CMP, MMM volunteers, CSV and OD CMC and CMA.

5.2.3 Provide short-term support to OD CMC and ART clinic to coordinate and support CSV.

5.2.4 Explore the feasibility of the transition of stabilized PLHIV to existing community support mechanisms.

### ***5.3 Long-term integration of CPBCS model into primary health care***

5.3.1 Initiate discussions with the MOH on the potential and process of integrating CBPCS into local primary healthcare structures.

## Component 6: HIV TESTING and COUNSELLING

### Rationale

In 2015 there were 74,651 HIV tests performed across 67 VCCT sites in 33 hotspot OD, where 3951 HIV positive cases (adults and children) were identified.<sup>65</sup> By 2016, 1159 sites had completed training to offer HIV Testing and Counseling (HTC) across the country. HTC is supported by approximately 902 lay counselors divided into 225 teams who are also working in the 33 hotspot OD and are trained to provide community-based HTC.<sup>66</sup>

The current four approaches for providing HTC in Cambodia include:

1. Health Provider Initiated Testing and Counseling (HPITC) at health facilities using finger prick Point Of Care (POC) testing, Family Health Clinics, MMT clinics and hospital wards for target populations such as pregnant women, TB patients, STI patients, MMT patients and IPD/ OPD patients as well as individuals in prisons and closed settings.
2. Community/Peer Initiated Testing and Counseling (C/PITC) including community HIV screening and counseling for key populations by lay counselors and for targeted general populations under CBPCS. (Refer B-COPCT Component).
3. Confirmatory HTC in 65 VCCT sites collocated with ART sites for clients who were found HIV reactive through screening at health facilities or community sites.
4. Partner Notification, Tracing, and Testing (PNTT) (Refer B-IACM Component).

With the rapid expansion to new HTC sites, some challenges were encountered such as shortage of supplies and reagents, difficulty in gathering HIV testing data, lack of a quality assurance scheme for POC testing, and concerns regarding confidentiality of community-based testing services.

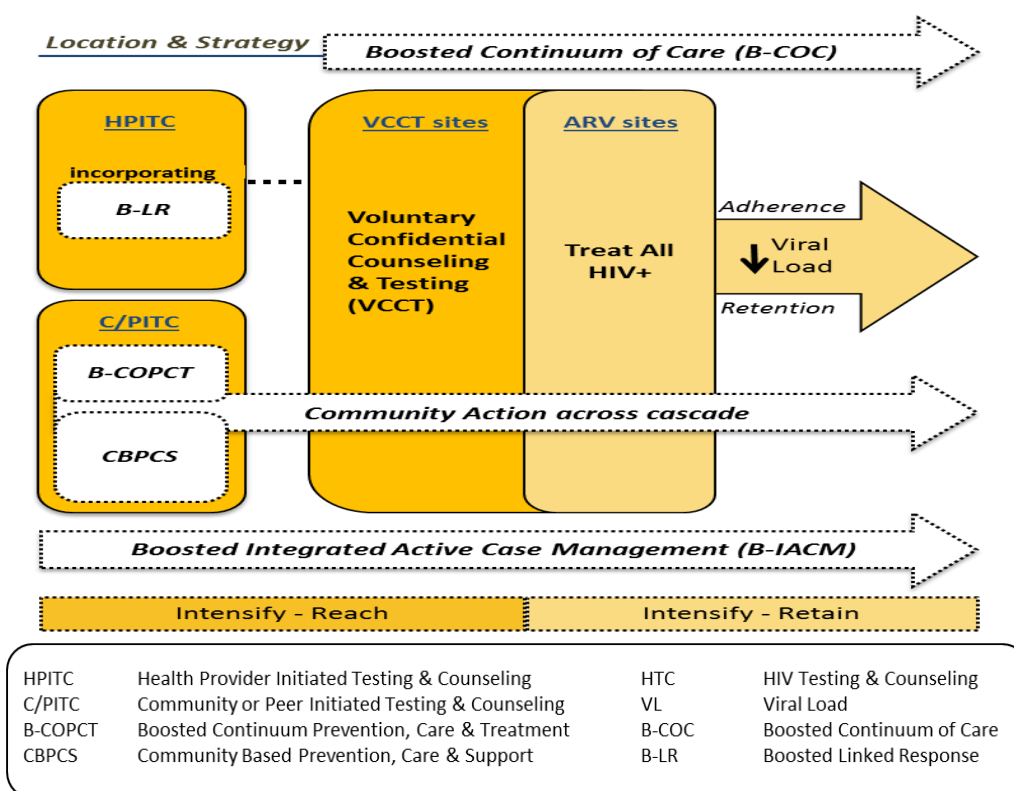
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<sup>65</sup> DMU VCCT report 2015 [http://nchads.org/DataMGT/vcct\\_annual\\_2015.pdf](http://nchads.org/DataMGT/vcct_annual_2015.pdf)

<sup>66</sup> NCHADS HTC Unit (2016) & KHANA 2015 reports

Additional challenges have been faced while implementing C/PITC for key populations, particularly the low rate for identifying reactive key population cases. This may be attributable to confidentiality concerns, capacity of lay counselors and quality of screening, or it may be because key population individuals with HIV or who suspect they could be HIV positive are reluctant to come forward for testing. It also may be because not all key populations are at risk (some FEW are not selling sex for instance); therefore, many individuals at low-risk or no risk might have been tested.

Figure 16 HIV Testing and Counseling (HTC)



From 2016 to 2020, HTC will be strengthened to detect 90% of the remaining HIV cases in the country and reach the first 90 of the UNAIDS global 90-90-90 targets. Challenges will be addressed in areas such as forecasting; Procurement and Supply Chain Management (PSM); clarifying and standardizing site, district and provincial reporting; strengthening and ensuring the quality of testing and counseling; improving linkages and referral to relevant care and treatment services under the B-IACM approach; and working with development partners, including NGOs that manage HTC services.

Innovative approaches will be implemented to increase uptake of HTC among target populations at health facilities and better targeting and identifying key populations with higher and overlapping risks (e.g. using a risk-screening tool prior to testing) (Refer B-COPCT Component). New HTC sites will be established to reach POC HIV testing in all health centers nationwide. Streamlined approaches to better target specific populations in the community will be explored to improve the rate of detection of the remaining PLHIV not yet aware of their HIV status in the country.

The goal of HTC program is to intensify case finding and enrolment and to gather information on populations and locations where HIV is found. This will help the national program to make strategic choices to define new efficient and effective streamlined approaches to reach the first 90 target.

### **Objectives**

1. To ensure early HIV case detection of remaining HIV cases among key populations and targeted general populations (Identify, Reach).
2. To link and retain HIV positive patients to HIV care and treatment (Intensify, Retain).
3. To assist PLHIV to notify and trace partners for HIV testing (PNTT).

### **Core Strategies**

- 6.1 To provide universal access to finger prick HTC in ANC, STI, TB and other medical services through H/PITC at health facilities.
- 6.2 Optimize HTC among key populations and other targeted general populations, with outreach HTC identifying and targeting those groups at risk as well as those at higher risk of being HIV positive using adapted case profiling screening tools.
- 6.3 Improve the quality of HTC at facilities and in the community for key and targeted general populations (outreach and CBPCS HTC).

## **Core Activities**

### ***6.1 Provide universal access to finger prick HTC in ANC, STI, TB and other medical services through H/PITC at health facilities:***

- 6.1.1 Continue the scale-up of HTC to all health centers in Cambodia for pregnant women, STI, TB and OPD patients.
- 6.1.2 Strengthen the implementation of H/PITC at health facilities (including HC, RH wards, maternity, family health clinics and MMT clinic), for STI, pregnant women, TB, IPD/ OPD and MMT patients as well as malnourished pediatric patients.
- 6.1.3 Increase HIV testing among children (including children malnourished or with HIV symptoms, and asymptomatic children from infected adult cases identified through HTC and PNTT).
- 6.1.4 Implement the use of dual HIV-syphilis test at ANC services for all pregnant women.
- 6.1.5 Strengthen the referral of HIV reactive clients to confirmation test at VCCT using the B-IACM approach at OD level.
- 6.1.6 Strengthen the referral of HIV positive clients for enrollment at ART sites once confirmed positive at VCCT site using B-IACM and B- COC Components.
- 6.1.7 Strengthen PNTT of PLHIV through VCCT counselors in collaboration with ART service and using the B-IACM approach.
- 6.1.8 Work with DMU and AIDS Care Unit to improve monitoring and evaluation systems for VCCT and HTC with special emphasis on referral tracking system using B-IACM approach
- 6.1.9 Coordinate with VCCT Units, LMU and Procurement units to provide adequate HIV test kits and supplies to all VCCT and HTC sites.

6.1.10 Coordinate with LMU and Procurement units to provide adequate program data input to inform robust and accurate quantification of HIV and Syphilis test kits and avoid stock-out at the facilities.

6.1.11 Work with the MOH to integrate HTC as part of MPA in health centers.

**6.2 Optimize HTC among key populations and other targeted general populations, with outreach HTC identifying and targeting those at high risk using adapted case profiling screening tools**

6.2.1 *Continuously evaluate HTC universal access and risk-screening strategies to better identify at risk and those at higher risk in key populations and targeted general populations in the community and strengthen the detection of remaining HIV positive cases.*

6.2.2 *Strengthen the referral of HIV reactive cases to confirmatory testing at VCCT co-located with ART sites using the B-IACM (IRIR) approach.*

6.2.3 *Strengthen the referral of confirmed HIV positive cases for enrolment at HIV care and treatment site using the B-IACM (IRIR) approach.*

6.2.4 Increase knowledge about HTC and VCCT (benefits, how to access, risk self- assessment etc.) and access to ART care among targeted populations.

6.2.5 Improve monitoring and evaluation systems for HTC and VCCT with special emphasis on referral tracking system using the B-IACM (IRIR) approach.

**6.3 Improve the quality of HTC at facilities (POC HTC) and in the community for key and targeted general populations (outreach and CBPCS HTC)**

6.3.1 *Review SOP for HTC and update algorithms for HIV testing of at risk key population (IRIR for key populations) and other target general populations in the community (IRIR for targeted general populations through CBPCS).*



- 6.3.2 *Review the training HTC curriculum for HCP and lay counselor for HTC at facilities and among key populations and other target populations in the community.*
- 6.3.3 *Build capacity of health facility and community staff on HTC by using finger prick approach through training, counselor network meetings, and mentoring activities.*
- 6.3.4 *Provide regular supervision, EQA, and QC to improve the quality of HTC services at facilities and for key populations and other target populations in the community using new model of supervision (refer Laboratory Component for quality assurance of HIV testing).*
- 6.3.5 *Improve the quality of PNTT through training VCCT and ART counselors and close monitoring through B-IACM (Refer B-IACM-PNTT Component).*

## Component 7: LABORATORY SERVICES

### Rationale

Laboratory services have played an important role in the successful scale-up of the COC framework for PLHIV in Cambodia since 2003 in order to determine eligibility criteria for ART initiation and to be able to monitor response to treatment. Cambodia has nine FACSCount™ Abbott m2000 machines (in 8 laboratories) and twelve PIMA™ machines (in 11 laboratories) for CD4 cell count. Cambodia also has three HIV viral load and EID (DNA PCR tests) machines, with two in Phnom Penh and one in Siem Reap. Each Referral Hospital has on-site laboratory services for biochemistry and hematologic analysis.

Consistent with WHO guidelines (2015), the revised Cambodian HIV clinical guidelines recommend CD4 monitoring to be reduced while routine viral load monitoring will be scaled-up for all patients on treatment.<sup>67,68, 69</sup> NCHADS aims to expand access to viral load testing to more patients through demand generation activities, as well as strengthening sample transportation and coordination mechanisms between NCHADS Laboratory and AIDS Care Units. In order to optimize sample transportation nationwide, NCHADS is piloting a hub and spoke sample transportation model aiming to shorten results turnaround time, increase testing capacity, improve result return and save costs. NCHADS will begin the national scale-up of this sample transportation model in 2016. NCHADS Laboratory Unit will also work closely with the Data Management Unit (DMU) on linking patient monitoring and laboratory reports by introducing a barcode system, and move from paper to electronic data systems to reduce data entry errors, improve the data reliability and decrease turnaround time for results.

Over the duration of this Strategic Plan NCHADS will:

- Collaborate with the Bureau of Laboratory, Department of Hospital

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<sup>67</sup> Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection, WHO, 2016

<sup>68</sup> Cambodian National HIV clinical management guidelines for Adults and Adolescents, MOH Aug. 2016.

<sup>69</sup> Guidelines for Diagnosis and Antiretroviral Treatment of HIV Infection in Infants, Children and Adolescents in Cambodia (draft 2015).

Services of MOH on quantification and forecasting of laboratory commodities including hematology and biochemistry for PLHIV

- Integrate laboratory monitoring for HIV-related diseases/side effects. (hematology, Cr, LFT, hepatitis) into MOH integrated laboratory monitoring system (training, equipment, reagents, SOP).
- Work in collaboration with NIPH on national/ international accreditation (SLMTA, ISO) of laboratories including NCHADS laboratory and provincial hospital laboratories<sup>70</sup>.
- Integrate transportation of samples and results reporting (i.e. Gene Xpert TB test with CD4).
- Explore the use of common platforms for multiple tests (i.e. use of GeneXpert for CG/CT and Cryptococcus, in addition to TB).
- Integrate HIV and STI laboratory training into the curriculum of Technical School for Medical Care (TSMC).

## **Objectives**

1. To provide appropriate clinical laboratory services, including viral load testing to all people in need for HIV/AIDS and STD diagnostics, care and treatment.
2. To provide reliable laboratory data as needed for programmatic analysis surveillance and research.

## **Core Strategies**

- 7.1 Provide clinical laboratory services to support the national HIV and STI program including the scale-up of viral load testing.
- 7.2 Ensure correct and timely laboratory results through a strong quality management system.
- 7.3 Provide laboratory services for surveillance and research.

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<sup>70</sup> Strengthening Laboratory Management Toward Accreditation (SLMTA) <https://www.slmta.org/>  
ISO/IEC 17025:2005 General requirements for the competence of testing and calibration  
Laboratories [http://www.iso.org/iso/catalogue\\_detail.htm?csnumber=39883](http://www.iso.org/iso/catalogue_detail.htm?csnumber=39883)

## **Core Activities**

### ***7.1 Provide clinical laboratory services to support the national HIV and STI program including the scale-up of viral load testing***

- 7.1.1 Create a laboratory organogram and structure to support clinical laboratory activities.
- 7.1.2 Create and maintain all necessary documents for Good Clinical Laboratory Practice at each laboratory site.
- 7.1.3 Set up and maintain the necessary laboratory equipment and testing kits required for the HIV/AIDS and STD program guidelines.
- 7.1.4 Provide appropriate clinical laboratory services for diagnostic and monitoring tests for HIV/AIDS and STD care and treatment per national guidelines.
- 7.1.5 Provide appropriate clinical laboratory services or linkages for diagnostic and monitoring tests for HIV-TB and HIV-hepatitis B/C co-infections to support national clinical guidelines.
- 7.1.6 Evaluate and possibly introduce new technology for diagnosis and monitoring for HIV and STI such as dual HIV-syphilis rapid test and Cryptococcus Ag testing to support national clinical guidelines.
- 7.1.7 Introduce and set up the HIV drug resistance testing at NCHADS laboratory for pre-treatment and acquired drug resistance surveys.
- 7.1.8 Strengthen and scale-up the sample transportation system for EID, HIV viral load and CD4 tests from sites to the laboratory following lessons learned from the piloted transportation model.
- 7.1.9 Strengthen the timeliness and accuracy of reporting testing results back to sites and integration of test results into patient electronic record systems.
- 7.1.10 Maintain an accurate stocking and quantification system to ensure

all necessary materials, consumable and reagents are available in laboratory for providing services.

- 7.1.11 Work with relevant NCHADS technical units to produce appropriate forecasts for test kits and laboratory items.

## ***7.2 Ensure correct and timely laboratory results through a strong quality management system***

- 7.2.1 Develop and set up the quality assurance system in the NCHADS laboratory network.
- 7.2.2 Provide information about laboratory techniques or supplies to the program as needed.
- 7.2.3 Cooperate with laboratory network and national/ international partners to improve quality of the public sector laboratory network.
- 7.2.4 Monitor, supervise, and provide in-service training to the NCHADS laboratory network for HIV/ STI related testing and monitoring.
- 7.2.5 With NIPH to develop a quality control program for NCHADS laboratory network program for HIV and STI diagnosis and monitoring.

## ***7.3 Provide laboratory diagnostic services for surveillance and research***

- 7.3.1 Provide training and conduct testing for surveillance and research for HIV and STI programs (IBBS).
- 7.3.2 Contribute to the laboratory component of relevant research related to HIV and STI prevention, care and treatment programs.
- 7.3.3 Provide storage of biological materials (serum and/or plasma) for further study or research programs as defined by ethically approved research protocols.
- 7.3.4 Work with other laboratories on new technologies and research to

further improve laboratory services for HIV and STI in Cambodia.

- 7.3.5 Contribute to the production of laboratory data for routine programmatic use.
- 7.3.6 Establish and link NCHADS laboratory databases with HIV patients monitoring database to improve patient longitudinal monitoring.
- 7.3.7 Work with MOH-DPHI to link NCHADS laboratory database with MOH integrated laboratory monitoring system.
- 7.3.8 Explore integrating HIV, syphilis, CD4 and viral load testing into the general laboratory service package.

## **Component 8: LOGISTICS and SUPPLY MANAGEMENT**

### **Rationale**

NCHADS Logistics Management Unit (LMU) was established in 2005 to meet the increased demand for HIV commodities during the scale-up of ART. Since 2014 NCHADS LMU has focused on strengthening and harmonizing the Logistics Management Information System (LMIS) with patient data systems maintained by the NCHADS Data Management Unit (DMU). Over the next five years LMU plans to integrate the Drug Inventory Database (DID) system with the MOH Central Medical Stores (CMS) system for all LMIS activities.

### **Objective**

- 1** To monitor supply and demand of all HIV commodities at the national and site-level to ensure a smooth un-interrupted supply to all COC sites in-country

### **Core Strategies**

- 8.1** Strengthen and monitor ART site consumption reporting and distribution for ARV drugs, reagents and consumables needed for implementation of HTC, VCCT, STD, and laboratory programs.
- 8.2** Complete precise quantification for all required HIV/STI care and treatment commodities used in ART sites, including ARV drugs, reagents, and consumables, regularly updating all forecasts.
- 8.3** Ensure effective coordination and collaboration between the NCHADS program, CMS, DDF, other relevant MOH departments and external procurement and supply chain partners to ensure effective and un-interrupted supplies of ARV & STI drug and reagents.
- 8.4** Strengthen stock management practices for ARVs by pharmacies, laboratories and clinical settings through site supervision visits.
- 8.5** Strengthen human resource capacity at the national, provincial, referral hospital, operational district and health center level through local/ regional training.

## **Core Activities:**

### ***8.1 Strengthen and monitor ART site consumption reporting and distribution for ARV drugs, reagents and consumables needed for implementation of HTC, VCCT, STI and laboratory programs***

- 8.1.1 Develop and roll-out standardized national consumption tools for ARV, OI, and Laboratory commodities, to be used at all ART sites in-country.
- 8.1.2 Collect and revise all site consumption reports to oversee CMS distribution of all commodities to all sites and verify against patient morbidity data.
- 8.1.3 Collaborate with site medical staff to ensure that consumption assumptions are aligned with clinical practices.
- 8.1.4 Establish linkage between patient monitoring data and consumption data.

### ***8.2 Complete precise quantification for all required HIV/STI care and treatment commodities used in ART sites, including ARV drugs, reagents, and consumables, updating all forecasts regularly***

- 8.2.1 Incorporate all updated strategic and treatment indicators into HIV commodity forecasts to meet patient treatment targets, revising the forecasts with patient morbidity, stock and consumption data as it becomes available.
- 8.2.2 Ensure quality, accuracy and consistency of patient ARV data through strengthened coordination between NCHADS/DMU and LMU.

### ***8.3 Ensure effective coordination and collaboration between the NCHADS program, CMS, DDF, other relevant MOH departments and external PSM partners to ensure effective and un-interrupted supplies of ARV and STI drugs and reagents for all sites***

- 8.3.1 Coordinate meetings of the Supply and Logistics working group



with all relevant units within NCHADS, all treatment sites, and external HIV partners that support and collaborate with the NCHADS program to endorse/update forecasts, address procurement and supply management issues as they arise and provide regular updates on stock monitoring.

***8.4 Strengthen stock management practices for ARVs by Pharmacy, Laboratory and clinical settings through site supervision visits***

- 8.4.1 Monitor ARV drug stock management at all ART sites each quarter to identify sites in need of supervision visits and follow-up with pharmacy staff after visits to assess improvement.
- 8.4.2 In coordination with MOH/DDF, NCHADS/LMU will monitor product quality that includes quality control sampling and testing of pharmaceuticals and health commodities in the supply chain.
- 8.4.3 A QC sampling and testing plan will be developed and a QC laboratory will be contracted to undertake QC testing.

***8.5 Strengthen human resources capacity at the national, provincial, referral hospital, OD level and COC sites through local/regional training.***

- 8.5.1 Conduct bi-annual regional workshops and refresher training for all relevant health care workers at ART sites on logistics and supply management.
- 8.5.2 Train new staff in ART sites on national tools and stock management practices.
- 8.5.3 Ensure staff and facilities are compliant with Good Storage Practice (GSP).

## Component 9: STI PREVENTION AND CONTROL

### Rationale

Female Entertainment Workers (FEW), Men who have Sex with Men (MSM), and Transgender (TG) are groups of populations at high risk of acquiring and transmitting HIV and STIs due to a greater frequency of high-risk sexual behaviors that expose them to these infections. As a consequence, HIV and STI prevalence among these groups are generally higher compared to the general population (Table 2). However, STI among both key population and general population individuals cause not only an increased risk of HIV transmission, but also an increased risk of infertility, cervical cancer, and adverse neonatal outcomes.

Based on findings from the latest STI sentinel prevalence survey in 2011 (SSS-2011)<sup>71</sup> 16.8% of FEWs who have more than seven partners per week were found to have gonorrhea and 20.6% of them were found to have chlamydia. In 2005, 1.8% of MSM were found to have rectal gonorrhea and 3.9% of these men had chlamydia (SSS 2005).

Based on what is known about the transmission dynamics of STIs and risk behavior of key populations in Cambodia, a STI prevention and control strategy needs to be implemented simultaneously with the HIV strategy at several levels. Firstly, the strategy should reduce transmission where STI incidence is highest, saturating coverage in key populations in order to have the greatest impact on transmission. Secondly, it should address the large burden of STI-related morbidity and mortality in the wider population, by improving STI services where people seek care. Finally, reliable information is needed on STI trends and risk behaviors; better monitoring and surveillance help program managers to assess needs and program performance, and to allocate resources to strengthen control efforts.

### Objective

- 1 To reduce STI/RTI prevalence, and that all cases receive treatment.

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<sup>71</sup> 2011 Cambodia, STI Prevalence Survey, NCHADS/MOH and US-CDC, April 2013

## **Core strategies**

- 9.1** Reduce STI/RTI transmission among key populations.
- 9.2** Improve STI/RTI prevention and case management for the general population.
- 9.3** Ensure reliable STI/RTI data to guide the response.

## **Core activities**

### ***9.1 Reduce STI/RTI transmission among key populations:***

#### **9.1.1** Expand access to STI/RTI care and treatment for key populations

**9.1.1.1** Expand coverage to Family Health Clinics (FHC) in high-risk areas to increase access to higher-risk key populations.

**9.1.1.2** Develop a new model for STI/RTI service delivery for Hard to reach key population Using Drop-in-Centers/clubs and other venues for MSM/TG and EW:

- Develop concept note in line with existing SOP for B-COPCT
- Develop curriculum and deliver training on STI/RTI treatment to staff at Drop-in-Centers/clubs
- Ensure that STI services do not overlap and High-Risk Venues (HRV) are identified

**9.1.1.3** Ensure outreach to hotspots using a streamlined OW/PE model in locations where NGO outreach is unavailable. (see prioritizing B-COPCT concept note).

#### **9.1.2** Increase user-friendliness of STI services for key populations

**9.1.2.1** Upgrade STI/RTI services in FHC

**9.1.2.2** Provision of adequate clinical and laboratory equipment for FHC

**9.1.2.3** Utilize the potential for clinic coordinators from key population networks to facilitate access to STI services by key populations

**9.1.3** Improve STI screening, immediate diagnosis and clinical management of asymptomatic STI among key populations.

9.1.3.1 Integrate point of care HIV and syphilis dual rapid test at FHC for Key population and at ANC for pregnant women.

9.1.3.2 Provide syphilis screening at first visit at FHC and at a six months interval for higher risk key populations.

9.1.3.3 Ensure every detected syphilis reactive client among key populations receives correct referral and treatment.

9.1.4 Ensure referral for birth spacing services are available for FEW.

9.1.5 Ensure appropriate supplies for appropriate diagnosis and treatment of STI among key populations are available at all facilities providing STI services.

## **9.2 Improve the STI/RTI prevention and case management for the general population**

9.2.1 Up-grade the national STD clinic to be the National STI Reference Center for practice, training and research.

9.2.2 Update national STI case management guidelines according to current WHO recommendations.

9.2.3 Provide STI management practice and training for health care providers at the National STD Clinic including penicillin injections for syphilis treatment in newborns.

9.2.4 Provide STI case management at priority HC and FHC for the general population.

9.2.5 Provide syphilis screening and treatment for all pregnant women and their exposed newborns.

## **9.3 Ensure reliable STI data to guide the program:**

9.3.1 Collaborate with relevant units of NCHADS and partners to conduct SSS and IBBS.

- 9.3.2 Collaborate with relevant national and international institutions to conduct regular Gonococcal Antimicrobial Susceptibility Program (GASP) to support the update of STI guidelines.
- 9.3.3 Set up a mechanism to monitor trends of major STI syndromes (urethral discharge and genital ulcer) to investigate and rapidly respond to STI outbreaks.
- 9.3.4 Update recording and reporting forms for FHC to identify key populations and PLHIV and to capture access by key populations to HTC, BS, Pre ART/ART and FHC.

## **Component 10: STRATEGIC INFORMATION**

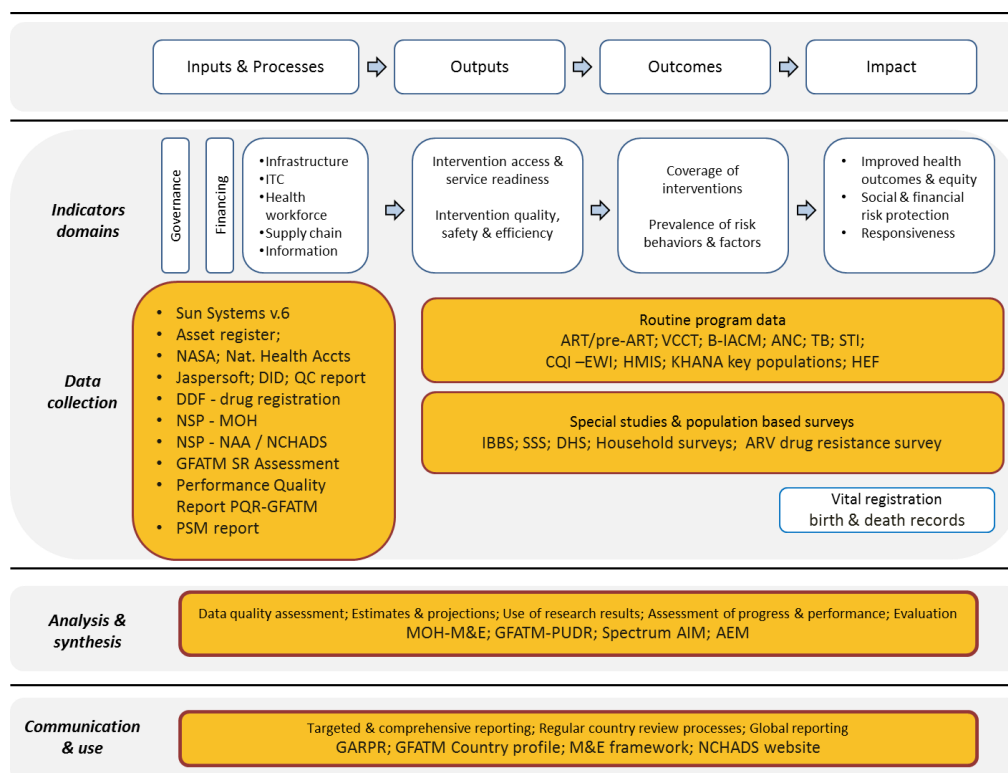
### **Rationale**

Strategic Information (SI) within the HIV program serves the dual purpose of improving as well as focusing the national response. SI relates to information and data retrieved from multiple sources that is assessed in conjunction with routine HIV program data. These sources include the HIV Monitoring and Evaluation (M&E) framework, surveys, mid-term and final reviews of interventions, pilot projects, case studies, needs assessments and other related SI sources.

Data quality and overall effectiveness is reviewed as part of the role of SI-TWG. Data validity is assured through the use of triangulated methods, taking into account the inherent limitations and strengths of individual data sources so as to deliver a more complete picture of the effectiveness of the HIV response.

The Spectrum AIDS Impact Model software (Spectrum AIM) utilizes program data to produce national estimates. Demographic data, such as the size and structure of the population and fertility, mortality and migration rates, are incorporated into the model. Scenario planning using the Asian Epidemiological Model software (AEM) predicts the impact of different interventions, and is constructed using NCHADS program data together with Spectrum AIM estimates.

Figure 17 NCHADS Strategic Information - M&E system<sup>72</sup>



Cambodia has a well-established HIV surveillance and reporting system, with routine data collection using standardized methods for all components (COPCT, PMTCT, VCCT, STI, pre-ART and ART). HIV sentinel surveillance events are monitored each quarter at facilities using ART databases. Ensuring all databases are linked and reinforcing the B-IACM approach continue to be the key features to reliably track PLHIV along the HIV cascade of services.

The agreed M&E framework 2016 was developed with support of country and development partners. A core set of indicators classifying baselines and targets is included at Annex 1. These indicators and targets will be reviewed annually (where possible) as well as to inform exercises such as Spectrum AIM and AEM modeling. Targets and indicators are updated based on available evidence and in response to changed circumstances.

Improved size estimations related to key populations are largely contained in

<sup>72</sup> Source: Monitoring, evaluation and review of national health strategies: a country-led platform for information and accountability (Geneva: WHO IHP+; 2011) <http://www.who.int/healthinfo>

the Integrated Biological and Behavioral Surveys (IBBS) and the STI Sentinel Survey (SSS). The latest IBBS and SSS are both due for completion in 2016 and will supply up to date information for key populations (EW, MSM and TG).

Currently aggregate numbers of PLHIV diagnosed is reported by VCCT sites, which only allows for limited analysis of the data and does not allow for removal of clients who test multiple times. An improved case reporting system would allow for de-duplication of clients and allow for tracking of newly diagnosed HIV infected patients, as well as providing current information about newly diagnosed individuals such as mode of transmission (sex work, MSM, IDU, partner of PLHIV), age, sex, and location. An individual case based reporting system as part of B-IACM is under development that will help monitor progress of active HIV case detection and enrollment into the HIV care cascade.

NCHADS has outlined a plan for surveillance, special studies and research to ensure that core information on both key populations and priority populations is updated on a regular basis (Table 4).

*Table 4 Schedule of Surveillance, Special Studies, & Evaluations*

ACTIVITY	TIMEFRAME	LEAD ORGANIZATION
<b>SURVEILLANCE</b>		
MSM/TG/STI Integrated Behavioural and Biological Survey (IBBS) and Size Estimation Survey	2018	NCHADS
FEW/STI Integrated Behavioural and Biological Surveys and Size Estimation	2019	NCHADS
PWID/PWUD Integrated Behavioural and Biological Survey and Size Estimation	2017	NCHADS
ANC Sentinel Surveillance Survey	2018	NCHADS
<b>ON-GOING</b>		
Location/Venue mapping of key populations and services	Annually	NCHADS
Data analysis on the survival of PLHIV who have been on ART for 12 months, 24 months and 60 months (Adults and Children)	Annually	NCHADS
Integrated Continuous Quality Improvement and Early Warning Indicator	as necessary	NCHADS



survey will be conducted in 65 ART sites including adult and paediatric sites		
Modelling Exercises for HIV prevalence, HIV Incidence, Deaths, Orphans and Treatment Needs	Every 2 years	NCHADS/ Partners
Conduct triangulating analysis through the existing data to assess the risk of newly diagnosed HIV+ pregnant women per OD.	Annually	NCHADS/ NMCHC
Monitoring and triangulation of data for the care and treatment cascade	Annually	NCHADS
<b>EVALUATIONS</b>		
Conduct mid-term evaluation of the Cambodia HIV Program to be used for adjustment of the National HIV Health Sector Strategic Plan	2019	NCHADS/ NAA
Evaluation of CBPCS programming model	2018	NCHADS&NGO

NCHADS DMU will actively participate in the MOH HIS Technical Working Group (HIS-TWG) to assess the feasibility of integrating with other MOH systems, focusing on:

- A Health Unique ID code and system (national health identification system)
- The DPHI PMRS/HEF systems with NCHADS databases
- The DPHI HIS
- Related databases (e.g. TB, PMTCT etc.)
- Establishing and using data standards across all MOH and partner data systems
- Linking patient data from multiple sources to support comprehensive care
- Linkage of laboratory data to ART database
- Linking LMIS/pharmacy data to ART database
- HIV case reporting system
- Expand use of the CMC/A tools
- Regular analysis of trends in socio-demographic and behavioral characteristics of individuals testing HIV positive
- Systems to protect confidentiality of patient information to protect data security

- Integrating the HIV and STI research agenda as part of the health sector research agenda.

## **Objectives**

1. To provide the evidence basis for tracking progress and guiding the implementation of this Strategic Plan through routine monitoring, operational research, surveillance and evaluation.
2. To strengthen the B-IACM initiative to improve HIV cascade outcomes toward the 90/90/90 targets

## **Core Strategies**

- 10.1** Strengthen understanding about the nature, size, distribution and determinants of key and other populations to enable better targeting and provision of HIV prevention, care, treatment and support services.
- 10.2** Strengthen the understanding of the characteristics and needs PLHIV and partners to enable better targeting and provision of HIV prevention, care, treatment and support services.
- 10.3** Ensure regular monitoring of program performance to check the accuracy of the data, and to utilize routinely collected program data to guide program design and implementation as well as policies and guidelines.
- 10.4** Promote research and use data for programmatic improvement and policy development.
- 10.5** Build a system to allow longitudinal follow up of individual PLHIV along the HIV cascade.
- 10.6** Undertake mid-term evaluation of the HIV program to be used for adjustment of the Cambodia 3.0 framework and guidance towards elimination.
- 10.7** Evaluate the achievement of Cambodia 3.0 and the outcomes of national and subnational HIV cascades toward the 90/90/90 targets in 2020.

## **Core Activities**

### ***10.1. Strengthen the understanding of the nature, size, distribution and determinants of key and other populations to enable better targeting and provision of HIV prevention, care, treatment, and support services***

- 10.1.1 Assess and evaluate options, and conduct surveillance surveys to generate provincial/city data to support local implementation.
- 10.1.2 Integrate key populations into one single survey (IBBS) every three years.
- 10.1.3 Determine the role and assess capacity of national and local levels for implementing the above activities and develop/implement capacity building plans accordingly.

### ***10.2 Strengthen the understanding of the characteristics and needs of PLHIV and partners to enable better targeting and provision of HIV prevention, care, treatment, and support services***

- 10.2.1 Regular review and analysis of B-IACM data (including HIV cases, HIV pregnant women & exposed infants and partners) to characterize newly diagnosed HIV cases for epidemiologic targeting and to identify OD and local implementers requiring support for maximizing retention;
- 10.2.2 Regular review of and analysis of data on partners of PLHIV with high risk behavior.

### ***10.3 Ensure regular monitoring of program performance to check accuracy of the data, as well as utilization of routinely collected program data to analyze HIV cascade outcomes to guide program design and implementation as well as policies and guidelines***

- 10.3.1 Develop and rollout CQI-EWI integrated SOP/dashboard that consists of core indicators including those for outcomes (based on electronic database) for automated analysis for use at national and sub-national level program monitoring of the HIV cascades.

10.3.3 Perform regular Data Quality Audit (DQA) at sites to assess and maintain data collection and entry into databases.

10.3.4 Provide capacity building to national and subnational staff involved in routine data management to properly use the dashboard, understand EWI and alert systems and perform regular HIV cascade analysis to identify gaps and provide solutions.

10.3.5 Assess progress towards outcomes of subnational and national HIV cascades and the achievement of the 90/90/90 targets.

**10.4 Promote research, and use data for programmatic improvement and policy development**

10.4.1 Update and develop national HIV research agenda including, but not limited to formative research, operations research to evaluate existing approaches and to develop innovative approaches, research to monitor the progress towards elimination including HIV incidence, clinical research and prevention research.

10.4.2 Promote and coordinate implementation of the national HIV research agenda.

10.4.3 Build capacity on research data utilization for programmatic and policy improvement.

**10.5 Build database linkages to allow longitudinal follow up of individual PLHIV along the HIV cascade**

10.5.1 Explore linkage/integration of patient database monitoring to allow longitudinal tracking of PLHIV along the HIV cascade from HIV test reactivity up to viral load suppression.

10.5.2 Strengthen B-IACM-IRIR approach including routine monitoring of additional PLHIV cases like LTFU, TB-HIV, STI, poor adherence and patients with detectable viral loads.

***10.6 Conduct mid-term evaluation of the Cambodia HIV Program to be used for adjustment of the Cambodia 3.0 framework and guidance towards elimination***

10.6.1 Undertake internal/external reviews of the implementation by the end of 2017.

10.6.2 As a result of internal/external reviews adjust the conceptual framework for achieving the 90/90/90 targets by 2020 (Cambodia 3.0) and related guidance.

10.6.3 Implement adjusted framework and guidance (2019-2020)

10.6.4 Establish national committee on eMTCT and HIV new infection elimination and develop clear criteria and roadmap to achieve it by 2025

**10.7 Evaluate the achievement of Cambodia 3.0 and the outcomes of national and subnational HIV cascades toward the 90/90/90 targets in 2020**

## **Component 11: PROGRAM MANAGEMENT**

### **Rationale**

NCHADS as part of the MOH has lead responsibility for recommending and implementing policies, strategies and Standard Operating Procedures for the health sector response to HIV/AIDS and STI in Cambodia. NCHADS works to achieve the overall goal and objectives to eliminate HIV new infections through the provision of quality of prevention, care and treatment services within the health sector.

NCHADS has developed a Functional Task Analysis (FTA) that identifies NCHADS structure and functions. The Annual Operational Comprehensive Plans (AOCP) initiated at OD, provincial and national levels ensures that implementation is consistent with the Strategic Plan, while the various coordination mechanisms are overseen via Technical Working Groups (TWG).

### **Objective**

To ensure that all stakeholders are well coordinated to implement this Strategic Plan

### **Core strategies**

- 11.1** Enhance partnership and coordination in implementing the Strategic Plan
- 11.2** Ensure that roles and responsibilities of managerial structures at national and sub-national level are fit for effective and efficient response to the Strategic Plan
- 11.3** Mobilize and use efficiently resources to support the implementation of the Strategic Plan.

### **Core activities:**

***11.1 Enhance partnership and coordination in implementing the Strategic Plan:***

11.1.1 Ensure good functioning of technical and sub-technical working groups at national and sub-national levels to adapt and adjust components and strategies as necessary to changing situations and needs, new technologies, etc.

11.1.2 Regularly update the Letters of Agreement between NCHADS, PHD, OD and relevant stakeholders

11.1.3 Set up and update mechanisms as required to ensure good coordination and sharing of responsibilities across all relevant stakeholders involved in the implementation of the Strategic Plan

**11.2 Ensure that roles and responsibilities of managerial structures at National, and sub-national levels are fit for effective and efficient responses to the Strategic Plan:**

11.2.1 Update the FTA to support the implementation of this Strategic Plan

11.2.2 With support from the MOH mobilize sufficient and appropriate human resources at national and sub-national levels

11.2.3 Organize capacity, management and leadership skills building through appropriate channels to strengthen implementation of the Strategic Plan

**11.3 Mobilize and use efficiently resources to support the implementation of the Strategic Plan:**

11.3.1 Set priority core activities of each program component of the Strategic Plan; and up-date regularly to ensure all resources are used efficiently.

11.3.2 Regularly up-date the costing of the Strategic Plan and ensure costing and accounts/financial management systems are consistent with the Strategic Plan.

*11.3.3* Advocate and mobilize resources both human and financial to support the implementation of the Plan.

*11.3.4* Develop the Annual Operational Comprehensive Plan (AOCP) based on each component of the strategic plan.

*11.3.5* Ensure funding allocations and timely funding flows to support the implementation of the strategic plan.

*11.3.6* Ensure the accountability and transparency of all (financial as well as non-financial) management systems.

## **D. IMPLEMENTATION ARRANGEMENTS**

NCHADS is a national center under the MOH with the responsibility of guiding, implementing, monitoring, evaluating and raising resources in support of the health sector response to HIV and STI.

NCHADS vision and actions are guided by:

- The MOH Strategic Plan; together with guidelines, policies and provisions for health service delivery.
- Five-year Health Sector Strategic Plan for HIV/AIDS and STI Prevention and Control are, developed by NCHADS and partners with approval by MOH and complemented by AOCP at the central and provincial levels to implement the activities of this strategic plan.
- Periodic updates by NCHADS of the components of the strategies, based on experience, shifting needs and priorities, the emergence of new technologies and international best practices.
- Detailed SOP which are produced and/or up-dated to guide implementation of components and strategies available on the NCHADS website in both the Khmer and English language ([www.nchads.org](http://www.nchads.org))
- Strong partnerships within and beyond the HIV sector, established

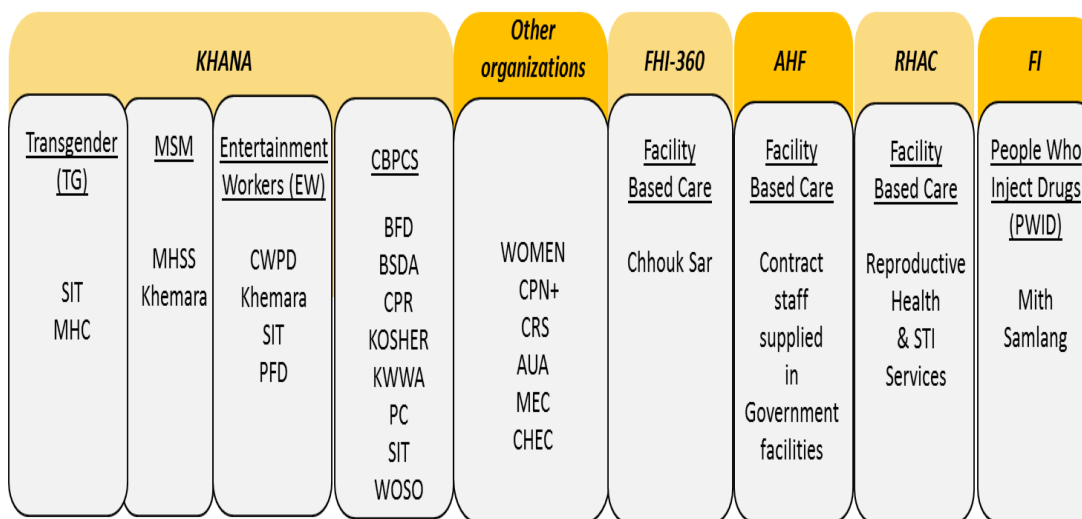


through relevant TWG to support the implementation of the Strategic Plan and the Cambodia 3.0 Initiative<sup>73</sup>

Responsibility for effective implementation of the Strategic Plan is shared between the government institutions and development partners shown in Figure 17. In practice this is coordinated and overseen by NCHADS together with the Provincial AIDS and STI Program (PASP), though with increasing emphasis on OD level planning and implementation via the Group of Champions for B-IACM.

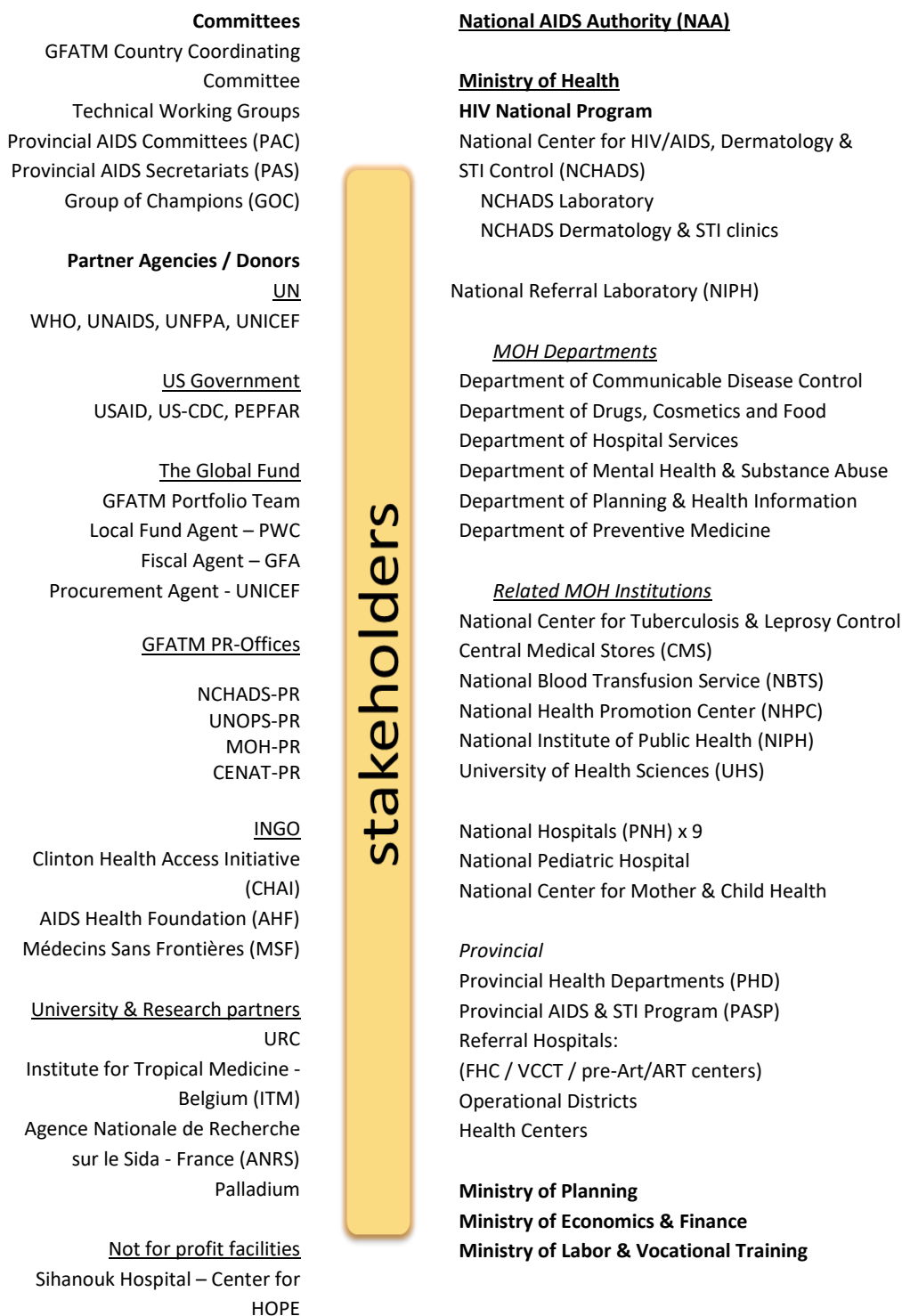
- NCHADS is responsible for the development of overall strategy and guidelines of program components, developing the AOCP, coordination of stakeholders, mobilization, and resource allocation to support the implementation of the Strategic Plan
- PASP and PHD develop AOCP based on national guidelines and SOP
- OD implements activities supporting the Strategic Plan with the support of PASP, NCHADS and development partners

Figure 18 Local stakeholders



<sup>73</sup> Conceptual Framework for Elimination of New HIV Infections in Cambodia by 2020, NCHADS MOH, 2012

Figure 19 Stakeholders for implementation of the HSSP-HIV 2016-2020



***MOH Departments and National Centers:***

The National MCH Center (NMCHC) is the key agency to implement B-LR to eliminate MTCT of HIV and syphilis. CENAT is the main partner with NCHADS in relation to a coordinated response to HIV and TB co-infection.

NCHADS collaborates with:

- CENAT to share concerns and updates on coordinated TB/HIV activities
- Ministry of Economics and Finance (MEF) collaborates with all disease programs (TB, Malaria and HIV) to facilitate tax exemptions for imported medicines, health commodities, office equipment, vehicles etc. and payment of VAT used as part of ODA project implementation. MEF works with MOH as ODA decreases to increase the national budget to support national programs, and to oversee the transition of budget allocations for MOH and staff funded via the Global Fund programs
- Ministry of Labor & Vocational Training (MOLVT) collaborates with NCHADS to educate and inform workers in establishing HIV prevention program in the workplace, and ensuring anti-discrimination policies for HIV are included as part of the Labor law
- MOH Central Medical Stores (CMS) and the Department of Drugs and Food (DDF) to ensure for registration, storage, quality assurance and quality control, logistics and distribution for medicines, reagents and health commodities to health facilities
- MOH Department of Communicable Disease Control (DCDC) provides a coordination role for communicable diseases including the HIV, TB and malaria programs
- MOH Department of Mental Health and Substance Abuse (DMHSA) for harm reduction initiatives
- MOH Department of Planning & Health Information (DPHI) in relation to the passive surveillance system, development and integration of NCHADS AOCIP into the MOH AOP, and health financing including HEF for PLHIV to access to HIV care and treatment services at the public health facilities
- MOH Department of Preventative Disease is responsible for non-communicable diseases including all chronic diseases such as diabetes, heart disease, hypertension etc. and will provide guidance about non-communicable diseases in general to improve the PLHIV
- MOH Department of Hospital Services (DHS), Laboratory Bureau to ensure the supply of reagents and other consumables to referral hospital laboratories

- National Blood Transfusion Center (NBTC), who have the primary responsibility for blood safety and for referral of confirmatory reactive cases for HIV and Syphilis to VCCT sites and to ART/STI clinics at the health facilities
- National Health Promotion Center (NHPC) for shared work on integration of CBPCS into broader volunteer health system
- National Institute of Public Health (NIPH) for collaborative work on training and research on HIV and STI including using the national Referral Laboratory located at NIPH for collaboration on QA/QC for HIV testing
- University of Health Sciences (UHS) and other training institutions for integrating training described under this Plan.

#### **D.1 Shared responsibilities**

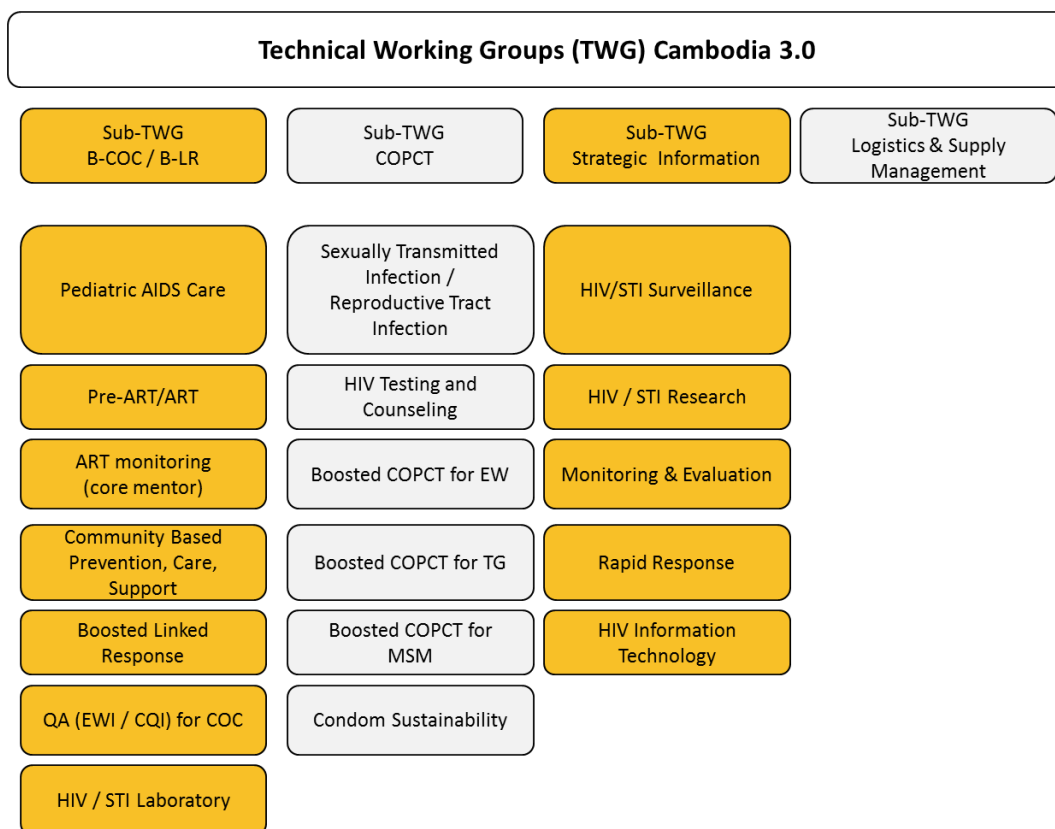
***Other Government Institutions:*** The National AIDS Authority (NAA), and its policy and technical boards (of which the MOH is a member); provincial entities, including PHD, Provincial AIDS Committees (PAC), and Provincial AIDS Secretariats (PAS).

***Partner organizations:*** NCHADS works closely with I/NGO and other partners involved in HIV/AIDS activities. These may be small, local NGO and Community Based Organizations (CBO), such as those receiving funds through KHANA, and through NCHADS on CBPCS activities (Figure 18) NCHADS also works with international organizations such as the AIDS Healthcare Foundation (AHF), UNAIDS, UNICEF, USAID and WHO to support the implementation of this Strategic Plan.

#### **D.2 Coordination mechanisms**

NCHADS has established Technical Working Groups to ensure the full benefit of technical expertise and experience from all partners, (Figure 20).

Figure 20 Structure of coordination mechanisms



### ***Rapid Monitoring and Analysis for Action (RMAA)***

The Rapid Monitoring and Analysis for Action (RMAA) group is led by NCHADS and comprised of NCHADS staff, key stakeholders and implementing partners. The RMAA meets regularly to monitor the B-IACM-PNTT process to ensure a rapid response to emergency or possible outbreak situations. This group also analyzes characteristics of newly identified cases and patients that require follow up.

### **D.3 NCHADS Annual Operational Comprehensive Plan (AOCP)**

NCHADS is responsible for supporting and coordinating provinces to develop Annual Operational Comprehensive HIV/AIDS and STI Plans (AOCP) and compiling these plans into an overall work plan for the HIV/AIDS Program, and ensuring this planning process is aligned with the Annual Operational Plan (AOP) of the MOH.

The NCHADS Annual Operational Comprehensive Plan (AOCP) aims to:

- Develop national annual targets for HIV/AIDS and STI control within the health sector
- Identify all partners working at OD, province and national level
- Identify annual funds available for HIV/AIDS and STI control
- Allocate annual funds to the provinces
- Develop three year rolling plans as part of the MOH budget process for submission to the Ministry of Health (MOH) as part of MOH' AOC to submit to the Ministry of Economics and Finance (MEF).

Stakeholders involved to develop the AOCP, include: HIV/AIDS management teams (PHD or Deputy PHD Director, PASP and PHD Accountant), PHD Planning Officer, NCHADS technical officers and participants from HIV/AIDS care and prevention partners, donors, technical advisors, NAA, other national programs and MOH departments and PLHIV networks.

#### **D.4 Functional Task Analysis - NCHADS**

NCHADS describes its organizational arrangements in the Functional Task Analysis (FTA). The NCHADS FTA aligns with the Strategic Plan to support the implementation of the Cambodia 3.0 Initiative for Elimination of HIV infections.

The FTA facilitates better management practices across the range of NCHADS activities providing greater clarity about operational aspects including the roles of units, their staff, as well as defining lines of accountability and responsibility.

## **E. RISK MANAGEMENT**

Risk is assessed and monitored in the HIV program in the four aspects related to organizational and clinical risk: Financial; Operational; Workplace/Patient; and Political (Figure 21). A comprehensive planning and consultation process has been enmeshed as part of strategic planning, limiting risk liability through the support of clinical guidelines, procurement and financial guidelines, HR policies; implementation of SOP, program monitoring and evaluation, disease

modeling, TWG, stakeholder consultation, financial audits, costed planning and legal compliance.

Figure 21 Risk Management process<sup>74</sup>

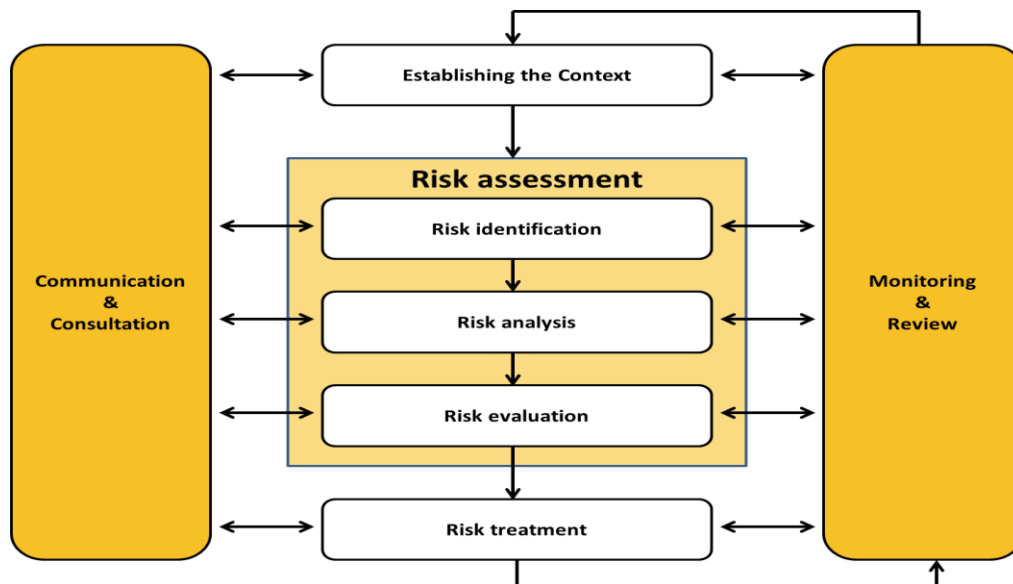
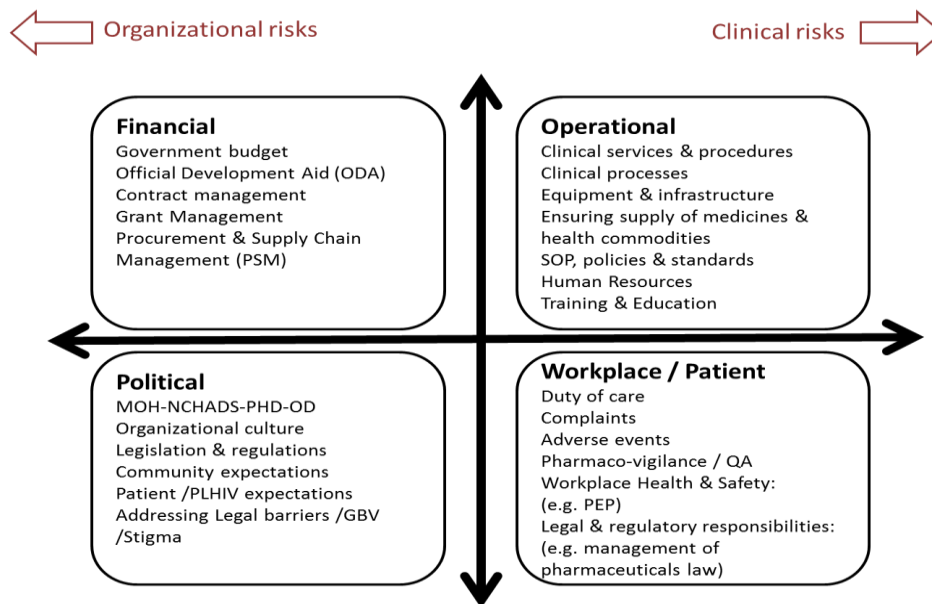


Figure 22 Dimensions of risk for the HIV program<sup>75</sup>



<sup>74</sup> Based on ISO 31000:2009 Risk Management <http://www.iso.org/iso/home/standards/iso31000.htm>

<sup>75</sup> Based on The Australian Council on Healthcare Standards (ACHS) Risk Management and Quality Improvement Handbook. EQUIP National. July 2013 [http://www.achs.org.au/media/69305/risk\\_management\\_and\\_quality\\_improvement\\_handbook\\_july\\_2013.pdf](http://www.achs.org.au/media/69305/risk_management_and_quality_improvement_handbook_july_2013.pdf)

## **E.1 Key Risks**

### ***E.1.1 Human Resources***

Financial incentives to government staff paid by donor partners have been discontinued since 2015, and similarly all contract positions located in government agencies (NCHADS and PHD/OD) paid by the Global Fund will cease by 2018. This has led NCHADS to develop a transitional Human Resources Plan (2016) to safely navigate the reduction in the number of contract staff, the creation of new MOH positions to absorb the tasks undertaken by contract positions, and for some contract positions (such as data management) to be engaged and financed directly by the MOH. Additionally as part of overall public sector reform, the RGC has committed to a gradual increase in government workforce salaries up to 2018.

### ***E.1.2 Financial resources***

Without an adequate financial commitment the HIV program will find effective implementation increasingly difficult. Although domestic contributions have steadily increased in recent years the HIV program in Cambodia remains largely dependent upon external resources. The AEM modeling to cost the Strategic Plan has been useful to provide justification for an increase in government budget allocation as well as evidence for additional resources from donor partners.

## **E.2 Longer term risks**

### ***E.2.1 Resurgence of the epidemic***

While most technical and professional opinion, and supported by AEM modeling suggests that a resurgence of the epidemic is highly unlikely in Cambodia, there is a potential risk of re-emergence if the program continues to be divested of significant funding. Many of the risk behaviors that spread HIV remain within the Cambodian context (buying and selling sex, high-risk MSM sex, drug use, etc.) can be targeted and addressed effectively. However in the absence of a robust prevention program transmission could easily escalate in the future if left un-checked.



### ***E.2.2 Failure to reach sustainability***

NCHADS has been actively working with the concerned institutions of the MOH to explore linkages and mainstreaming strategies by integrating HIV services of care and treatment into the existing health care system. It is working to fully incorporate laboratory services, logistics supply management into CMS and the DDF system, and strategic information into MOH systems; and to ensure that the needs of PLHIV are fully included into wider MOH community and equity fund systems.

### ***E.2.3 Deterioration in the enabling environment***

Because many of the behaviors that spread HIV may be socially or culturally unacceptable and can often be illegal, HIV programs are particularly vulnerable to changes in the enabling, regulatory environment with regard to these behaviors. The closure of brothels after implementation of the 2008 Law on Suppression of Human Trafficking and Sexual Exploitation, caused high volume sex work to move from brothels where it could be relatively easily targeted, to a wide variety of entertainment establishments and venues, where effectively targeting higher-risk situations has proved challenging. Discrete implementation of prevention programming among MSM and PWID is possible in the relatively tolerant enforcement environment. If the regulatory environment were to change significantly, for example because of harsher crack-downs, outreach and other prevention programs would suffer.

## **F. COLLABORATIONS**

The HIV program is responsible for recommending and implementing policies, strategies and SOP for the health sector response to HIV/AIDS and STI, while the delivery of services is the responsibility of the health facilities (National Hospitals, PHD/OD/RH/HC) in each province. Bringing different parts of the health system together between HIV and STI program, and other national programs, has meant B-LR works closely with the MCH program; the 'Three Is'<sup>76</sup>

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<sup>76</sup> 3I's:

- (i) Intensified TB case finding (ICF) among PLHIV and their household contacts;
- (ii) Isoniazid Preventive Therapy (IPT) for PLHIV unlikely to have active TB;
- (iii) Improved TB infection control (IC) measures in the Continuum of Care (COC)

strategy connects the HIV and TB programs; the B-COC links blood safety with HIV; the B-COPCT links the HIV program with the MOH harm reduction program via the Department of Mental Health and Substance Abuse (DMHSA).

## **F.1 Collaborations**

### ***F.1.1 Mainstreaming HIV in Health Equity Funds (HEF)***

Community Based Prevention Care and Support (CBPCS) has shown financial support was provided to PLHIV, primarily for transport for their regular attendance at MMM meetings, check-ups and supplies of ARV drugs. Eligible PLHIV in need of support are now included through HEF mechanisms.

### ***F.1.2 National Blood Transfusion Service for B-IACM***<sup>77</sup>

As part of the national HIV program NCHADS collaborates with the National Blood Transfusion Service (NBTS) to: (i) Help identify and refer blood donors testing positive for HIV and syphilis and ensure their enrollment into ART services; (ii) Develop coordinated PSM for critical products such as HIV testing reagents; (iii) Improve the connection between HIV testing and ART services with a goal of decreasing the time between case detection and referral to ART and treatment; (iv) Develop a communication plan to facilitate knowledge and information sharing.

### ***F.1.3 Mainstreaming HIV Prevention, Care and Support Services in Community Systems Strengthening (CSS) and Primary Health Care (PHC)***

The CBPCS component builds on existing home and community based care strategies to link PLHIV into community mechanisms for support. NCHADS will work with NCHP for the inclusion of existing PLHIV self-help and support groups into the MOH community systems strengthening and primary health care programs.

## **F.2 Longer term linkages and potential mainstreaming of HIV prevention, care and treatment services**

### ***B-COC and the Non- Communicable Diseases (NCD) program***

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<sup>77</sup> MOU NCHADS-NBTC 2014-2018

NCHADS will work with the Department of Preventive Medicine (DPM) and Department of Hospital Services (DHS) to explore:

- Systematic linkages between Pre-ART/ART sites and emerging NCD services (diabetes, hypertension, and cancer) at referral hospital level
- Possible use of MMM space for NCD chronic care (building on pilot projects in Ang ROKAR in Takeo province)
- Integration of HIV services into NCD chronic care services with full-time assigned staff.

**Hepatitis.** NCHADS will conduct joint studies with the University of Health Sciences on Hepatitis C observational cohort and Hepatitis C prevalence among pregnant women and PLHIV (supported by ANRS) to inform policy formulation.

**EPI.** NCHADS will explore the possibility of utilizing the EPI 6-week visit for EID follow-up and finding HIV suspected cases.

## G. FINANCING THE STRATEGIC PLAN

### G.1 Costing the Strategic Plan

In 2013 the National AIDS Spending Assessment (NASA-IV) in Cambodia<sup>78</sup> surveyed total HIV and AIDs expenditures from 2010-2012. This was estimated to be 58 million USD in 2010; 53 million USD in 2011; and 51 million USD in 2012 – a decline over the three year period of around 12%. NASA-V is underway to determine the actual expenditure (2013-2015) on the HIV response and the analysis will be available by late 2016.

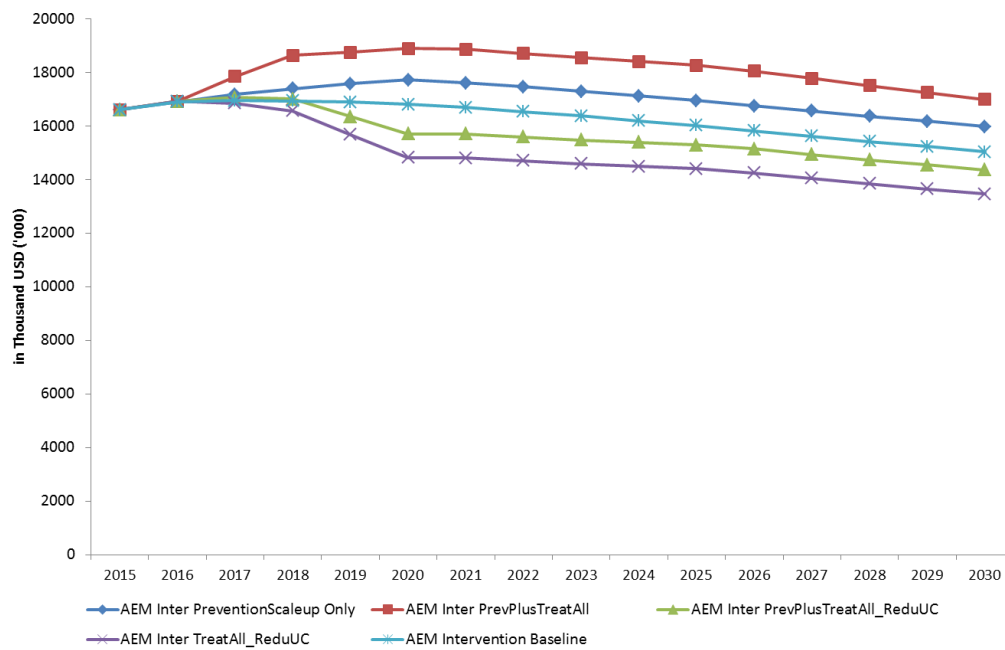
In parallel with the improved economic situation in Cambodia over the past decade, the success of the HIV/AIDS program has moved HIV within reach of virtual elimination (defined as <400 new infections/year) by 2025. The combined efforts of these national successes and changing stage of the

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<sup>78</sup> UNAIDS/NAA/NCHADS 2013 *National AIDS Spending Assessment (NASA IV) in Cambodia for 2011-2012*  
[http://www.unaids.org/sites/default/files/documents/cambodia\\_2011-2012\\_en.pdf](http://www.unaids.org/sites/default/files/documents/cambodia_2011-2012_en.pdf)

epidemic has resulted in reduced overall funding by donor partners from 2015 onwards compared to previous years. Increased financial support from the RCG to help meet this funding gap, led to a review and adjustment of the national response throughout 2015-16 to be more targeted, efficient and cost-effective while maintaining services to PLHIV and vulnerable populations. These efforts applied in particular to B-IACM-PNTT and CBPCS components and also take into consideration the financial implications due the 'Test and Treat' policy in order to meet the need for increases in ARV medicines with concurrent decreases in the application of CD4 tests.

Figure 23 AEM Costing Scenarios for the HIV program 2015-2030<sup>79</sup>



<sup>79</sup> MOH-NCHADS SI TWG *AIDS Epidemic Model Scenarios (AEM)* March 2016 supported by UNAIDS  
 Authors / contributors  
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 Dr. Khieu Kimlee (national consultant)  
 Clinton Health Access Initiative (CHAI)

Table 5 Cost estimates for the HIV response<sup>80</sup>

		2016	2017	2018	2019	2020
AEM update 2016 Treatment & Care + Prevention		16,927,000	17,072,000	17,016,000	16,353,000	15,716,000
<b>Basic program costs</b>		13,785,000	13,672,000	13,350,000	12,413,000	11,489,000
<b>Non-basic program costs</b>		3,141,000	3,401,000	3,666,000	3,940,000	4,227,000
<i>M&amp;E</i> <i>Research</i> <i>HSS</i> <i>Training</i>		<i>IEC</i> <i>Community Mobilization</i> <i>Enabling environment</i> <i>Infrastructure</i>				
<i>PMTCT</i>	\$700,000 per year (CHAI estimates)	700,000	700,000	700,000	700,000	700,000
<i>HTC</i>	550,000-700,000 test kits based on M&E framework (@\$1.07 once per yr)	588,500	631,300	674,100	716,900	749,000
<i>Laboratory EQAS</i>	Health centers x 1102 (US-CDC lab estimate)	200,000	200,000	200,000	200,000	200,000
<i>Pharmaco-vigilance LMIS</i>	LMIS infrastructure national sampling & ISO 17025 lab tests	300,000	300,000	300,000	300,000	300,000
	Audit of PA / PAIF			50,000		
<i>Innovation</i>	e.g PrEP; additional surveys etc.	200,000	200,000	200,000	200,000	200,000
<i>Unique Identifier System (UIS)</i>	hardware/software		250,000	250,000		
<i>Evaluation of HSSP-HIV</i>	consultancy(s)			100,000		100,000
<i>B-IACM</i>	2016/17=18 provinces 2018=25 provinces	170,568	170,568	236,900	236,900	236,900
<i>B-IACM</i>	training	30,000	30,000	30,000	30,000	30,000
<i>B-IACM national team</i>	P4R Management team (outsourced from 2018)	100,000	100,000	400,000	400,000	400,000
<i>B-IACM</i>	Contract staff Data Management (x25) Case Management Assistants (x33)	205,200	205,200	205,200	205,200	205,200
<i>B-IACM national meetings</i>	B-IACM workshops	31,675	31,675	31,675	31,675	31,675
<i>B-IACM evaluation</i>	2018 & 2020			50,000		50,000
<i>B-IACM P4R estimate</i>	inc by \$50,000 per yr 2016-17=18 provinces 2018=25 provinces	233,000	233,000	283,000	323,000	373,000
		<b>\$19,684,943</b>	<b>\$20,124,743</b>	<b>\$20,726,875</b>	<b>\$19,696,675</b>	<b>\$19,291,775</b>

<sup>80</sup> Unit costs based on NASA-IV 2012-2014 expenditures Basic and non-basic program costs calculated using AEM software (2016) for scenario 3 Scale up Prevention and include Test & Treat all policy

A financial analysis using the Asian Epidemic Model (AEM) costing tool in 2016 for a scaled up prevention, and Test and Treat scenario, estimated the total resources needed for HIV prevention and treatment was roughly \$15-17 million USD per year (2016 to 2030). This figure was adjusted upward to include PMTC, HTC for the targeted general population, Innovation, Pharmaco-vigilance, Unique Identifier System (UIS), QA systems and Laboratory EQAS, and B-IACM totaling an average of \$20MIL USD per year need to implement the program from 2016-2020.

## G.2 Budget Framework

NCHADS has been using QuickBooks accounting software for the last ten years. The chart of accounts was set up to match the core strategy and activities. NCHADS will update its financial software for GFATM projects to Sun Systems (Version 6). This system will guarantee several best accounting principles (accounting closure, separation of functions) and will facilitate budget monitoring and reporting. The chart of accounts has been adjusted to GFATM classifications. Others projects (US CDC) are managed using QuickBooks or via established government accounting procedures. The largest single source of funding for the AOCF is currently The Global Fund with USD \$36,130,185 approved December 2015 for the end of 2015 to December 2017.<sup>81</sup>

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<sup>81</sup> GFATM KMH-HIV-NCHADS New Funding Model grant  
2015 = \$ 2,754,660 (Oct-Dec 2015) 2016 = \$17,657,582; 2017 = \$15,717,944 Total 2015-2017 = \$36,130,185

### G.3 Financial Plan

The financial envelope to 2017 is shown in Table 6:

*Table 6 Indicative funding sources for NCHADS 2016-2017*

<i>Source</i>	<i>2016</i>	<i>2017</i>	<i>%</i>	<i>Total</i>	
RGC	1,750,000	1,750,000	7.85%	3,500,000	Incl. 1.2MIL OI medicines Admin /HR/Infrastructure
GFATM	17,657,582	15,717,944	74.83%	33,375,526	NCHADS-PR Finance Unit 5-May 2016
USG	3,000,000	3,000,000	13.45%	6,000,000	USG 12-May 2016 (Fin year Oct – Sept)
UNAIDS	592,400	448,000	2.33%	1,040,400	UNAIDS 9-May 2016
WHO	138,708	138,707	0.62%	277,415	WHO 9-May 2016 (incl 13% annual Program Support Costs)
UNFPA	65,000	65,000	0.29%	130,000	UNFPA 9 May 2016
CHAI	24,500		0.05%	24,500	NCHADS 10 May 2016
AHF	176,119		0.39%	176,119	NCHADS 10 May 2016
ITM	79,976		0.18%	79,976	NCHADS 9 May 2016
			100.00%	<b>\$44,603,936</b>	

## List of Acronyms

<b>ACM</b>	Active Case Management
<b>AEM</b>	Asian Epidemiological Model software
<b>AHF</b>	AIDS Healthcare Foundation (INGO)
<b>AIM</b>	AIDS Impact Model software
<b>ANC</b>	Antenatal Clinic
<b>ANRS</b>	Recherche Nord & Sud Sida-HIV et Hépatites (France)
<b>AOCP</b>	Annual Operational Comprehensive Plan
<b>ART</b>	Antiretroviral Therapy
<b>ARV</b>	Antiretroviral
<b>AUA</b>	ARV Users Association (NGO)
<b>BCC</b>	Behavior Change Communication
<b>B-COC</b>	Boosted Continuum of Care
<b>B-COCP</b>	Boosted Continuum of Prevention, Care & Treatment
<b>BFD</b>	Buddhism for Development (NGO)
<b>B-IACM</b>	Boosted Integrated Active Case Management
<b>B-LR</b>	Boosted Linked Response
<b>BS</b>	Birth Spacing
<b>BSDA</b>	Buddhism and Society Development Association (NGO)
<b>BSS</b>	Behavioral Sentinel Surveillance
<b>C/PITC</b>	Community/ Peer Initiated HIV Testing & Counseling
<b>CAD</b>	Community ARV Delivery
<b>CBO</b>	Community Based Organization
<b>CBPCS</b>	Community Based Prevention, Care & Support
<b>CD4</b>	Cluster of Differentiation 4 (glycoprotein): T-helper cells
<b>CDHS</b>	Cambodian Demographic Health Survey
<b>CENAT</b>	National Center for Tuberculosis & Leprosy Control
<b>CHAI</b>	Clinton Health Access Initiative (INGO)
<b>CHC</b>	Cambodia Health Committee (NGO)
<b>CHEC</b>	Cambodian HIV/AIDS Education and Care
<b>CMA</b>	Case Management Assistant
<b>CMC</b>	Case Management Coordinator
<b>CMP</b>	Case Management Provider
<b>CMS</b>	Central Medical Stores
<b>CNM</b>	National Center for Parasitology, Entomology & Malaria Control
<b>COC</b>	Continuum of Care



<b>COC-CC</b>	Continuum of Care Coordinating Committee
<b>COPCT</b>	Continuum of Prevention, Care & Treatment
<b>CPBCS</b>	Community Prevention Based Care & Support
<b>CPR</b>	Community Poverty Reduction (NGO)
<b>CQI</b>	Continuous Quality Improvement
<b>CRS</b>	Catholic Relief Services (INGO)
<b>CSV</b>	Community Support Volunteers
<b>CWPD</b>	Cambodian Women for Peace and Development (NGO)
<b>DAA</b>	Directly Acting Antiviral Agents
<b>DDF</b>	Department of Drugs & Food
<b>DHS</b>	Department of Hospital Services
<b>DID</b>	Drug Inventory Database
<b>DMHSA</b>	Department of Mental Health & Substance Abuse
<b>DMU</b>	Data Management Unit
<b>DNA</b>	Deoxyribonucleic Acid
<b>DPHI</b>	Department of Planning & Health Information
<b>DPM</b>	Department of Preventive Medicine
<b>DQA</b>	Data Quality Audit
<b>EES</b>	Entertainment Establishment Services
<b>EID</b>	Early Infant Diagnosis
<b>e-MTCT</b>	Eliminate Mother to Child Transmission
<b>EPI</b>	Enlarged Programme of Immunization
<b>EW</b>	Entertainment Worker
<b>EWI</b>	Early Warning Indicator
<b>FEW</b>	Female Entertainment Worker
<b>FHC</b>	Family Health Clinic
<b>FI</b>	Friends International (INGO)
<b>FTA</b>	Functional Task Analysis
<b>GAP</b>	(US-CDC) Global AIDS Program
<b>GASP</b>	Gonococcal Antimicrobial Surveillance Programme
<b>GCLP</b>	Good Clinical Laboratory Practice
<b>GFA</b>	GFA Consulting Group (fiscal agent)
<b>GFATM</b>	Global Fund to Fight AIDS, Tuberculosis & Malaria
<b>GIS</b>	Geographic Information Systems
<b>GNI</b>	Gross National Income
<b>GUD</b>	Genital Ulcer Disease
<b>HAART</b>	Highly Active Antiretroviral Therapy
<b>HACC</b>	HIV/AIDS Coordination Committee

<b>HBC</b>	Home Based Care
<b>HBV</b>	Hepatitis B virus
<b>HC</b>	Health Centre
<b>HCBC</b>	Home & Community Based Care
<b>HCV</b>	Hepatitis C Virus
<b>HDI</b>	Human Development Index
<b>HEF</b>	Health Equity Fund
<b>HEI</b>	HIV Exposed Infant
<b>HFBC</b>	Health Facility Based Care
<b>HIT</b>	HIV Information Technology
<b>HIV</b>	Human Immunodeficiency Virus
<b>HPITC</b>	Health Provider Initiated Testing & Counseling
<b>HPTN</b>	HIV Prevention Trials Network
<b>HRV</b>	High Risk Venues
<b>HSP-III</b>	MOH Health Strategic Plan (No.III)
<b>HSS</b>	HIV Sentinel Surveillance
<b>HSSP-HIV</b>	Health Sector Strategic Plan for HIV/AIDS & STI Prevention and Control in Cambodia
<b>HTC</b>	HIV Testing & Counseling
<b>IACM</b>	Intensive Adherence Case Management
<b>IBBS</b>	Integrated Bio-Behavioral Sentinel Surveys
<b>ICT</b>	Information & Communications Technology
<b>IEC</b>	Information, Education & Communication
<b>IHP+</b>	International Health Partnership
<b>INGO</b>	International Non-Government Organisation
<b>IO</b>	International Organization
<b>IPD</b>	In-Patient Department
<b>IPT</b>	Isoniazid Prevention Therapy
<b>IT</b>	Information Technology
<b>ITM</b>	Institute of Tropical Medicine (Belgium)
<b>IVR</b>	Interactive Voice Response
<b>JANS</b>	Joint Assessment of National Strategies
<b>JUTH</b>	Joint UN Team on HIV & AIDS
<b>KHANA</b>	Khmer HIV/AIDS NGO Alliance (NGO)
<b>KHEMARA</b>	Khemara (NGO)
<b>KOSHER</b>	Key of Social Health Educational Road (NGO)
<b>KP</b>	Key Populations
<b>KWWA</b>	Kampuchea Women Welfare Action (NGO)

<b>LMU</b>	Logistics Management Unit
<b>LR</b>	Linked Response
<b>LSM</b>	Logistics Supply Management
<b>LTFU</b>	Lost To Follow Up
<b>M&amp;E</b>	Monitoring & Evaluation
<b>MARP</b>	Most At Risk Populations
<b>MCH</b>	Mother & Child Health
<b>MDG</b>	Millennium Development Goals
<b>MEC</b>	Medecine de l'espoir (NGO)
<b>MHC</b>	Men Health Cambodia (NGO)
<b>MHSS</b>	Men's Health Social Service (NGO)
<b>MIF</b>	Ministry of Information
<b>MMM</b>	Mondol Mith Chouy Mith (Friends Help Friends) (NGO)
<b>MMT</b>	Methadone Maintenance Treatment
<b>MOEYS</b>	Ministry of Education, Youth & Sports
<b>MOH</b>	Ministry of Health
<b>MOI</b>	Ministry of Interior
<b>MOLVT</b>	Ministry of Labour & Vocational Training
<b>MOND</b>	Ministry of National Defense
<b>MOSVY</b>	Ministry of Social Affairs, Veteran & Youth Rehabilitation
<b>MPA</b>	Minimum Package of Activities (Health Center)
<b>MPF</b>	Ministry of Public Function
<b>MSI</b>	Marie Stopes International Cambodia (INGO)
<b>MSM</b>	Men who have Sex with Men
<b>MTCT</b>	Mother-to-Child Transmission [of HIV]
<b>MTEF</b>	Ministry of Economics & Finance
<b>MWVA</b>	Ministry of Women's Affairs
<b>NAA</b>	National AIDS Authority
<b>NASA</b>	National AIDS Spending Assessment
<b>NatDID</b>	National Drug Inventory Database (CMS)
<b>NBTC</b>	National Blood Transfusion Center
<b>NCD</b>	Non-Communicable Disease
<b>NCHADS</b>	National Center for HIV/AIDS Dermatology & STD
<b>NGO</b>	Non-Governmental Organization
<b>NIPH</b>	National Institute of Public Health
<b>NMCHC</b>	National Maternal & Child Health Centre
<b>NPH</b>	National Pediatric Hospital
<b>NSP-NAA (IV)</b>	NAA National Strategic Plan for a Comprehensive Multi-sectoral

	Response to HIV (No.IV)
<b>OD</b>	Operational District
<b>ODA</b>	Official Development Aid
<b>ODDID</b>	Operational District Drug Inventory Database
<b>OI</b>	Opportunistic Infection
<b>OPD</b>	Out-patient Department
<b>OW</b>	Outreach Worker
<b>P4RC</b>	Payment for Results Committee
<b>P4RMT</b>	Payment for Results Management Team
<b>PAC</b>	Pediatric AIDS Care
<b>PAS</b>	Provincial AIDS Secretariat
<b>PASP</b>	Provincial AIDS & STI Program
<b>PC</b>	Partner in Compassion (NGO)
<b>PCR</b>	Polymerase Chain Reaction
<b>PE</b>	Peer Educator
<b>PEP</b>	Post Exposure Prophylaxis
<b>PEPFAR</b>	The U.S. President's Emergency Plan for AIDS Relief
<b>PFDD</b>	Partners for Development (NGO)
<b>PHD</b>	Provincial Health Department
<b>PITC</b>	Peer Initiated HIV Testing & Counseling
<b>PLHIV</b>	People Living with HIV
<b>PMTCT</b>	Prevention of Mother-to-Child Transmission (of HIV)
<b>PNTT</b>	Partner Notification, Testing & Tracking
<b>POC</b>	Point of Care
<b>PPP</b>	Purchasing Power Parity
<b>PrEP</b>	Pre-Exposure Prophylaxis
<b>ProDID</b>	Provincial Drug Inventory Database
<b>ProTWGH</b>	Provincial Technical Working Group for Health
<b>PSI</b>	Population Services International (INGO)
<b>PSK</b>	Population Services Khmer (NGO)
<b>PTT</b>	Partner Tracking & Testing
<b>PW</b>	Pregnant Woman
<b>PWC</b>	Price Waterhouse Coopers (LFA)
<b>PWID</b>	People Who Inject Drugs
<b>PWUD</b>	People Who Use Drugs
<b>QA</b>	Quality Assurance
<b>QC</b>	Quality Control
<b>RACHA</b>	Reproductive & Child Health Alliance (NGO)

<b>RGC</b>	Royal Government of Cambodia
<b>RH</b>	Referral Hospital
<b>RH</b>	Reproductive Health
<b>RHAC</b>	Reproductive Health Association of Cambodia (NGO)
<b>RMAA</b>	Rapid Monitoring & Analysis for Action
<b>RTI</b>	Reproductive Tract Infection
<b>SAPAC</b>	Safe Abortion & Post-Abortion Care
<b>SCA</b>	Save the Children Australia (INGO)
<b>SDG</b>	Sustainability Development Goals
<b>SI</b>	Strategic Information
<b>SIT</b>	Save Incapacity Teenagers (NGO)
<b>SLMTA</b>	Strengthening Laboratory Management Toward Accreditation
<b>SOP</b>	Standard Operating Procedure
<b>Spectrum AIM</b>	Spectrum AIDS Impact Model software
<b>SPH</b>	School of Public Health
<b>SR</b>	Sub-recipient
<b>SRH</b>	Sexual & Reproductive Health
<b>SSR</b>	Sub-sub recipient
<b>SSS</b>	STI Sentinel Surveillance
<b>STD</b>	Sexually Transmitted Disease
<b>STI</b>	Sexually Transmitted Infection
<b>TA</b>	Technical Assistance
<b>TasP</b>	Treatment as Prevention
<b>TB</b>	Tuberculosis
<b>TG</b>	Transgender
<b>TMA</b>	Total Market Approaches
<b>TOR</b>	Terms of Reference
<b>TSMC</b>	Technical School for Medical Care (Cambodia)
<b>TWG</b>	Technical Working Group
<b>UC-LA</b>	University of California – Los Angeles
<b>UC-SF</b>	University of California – San Francisco
<b>UHS</b>	University of Health Sciences
<b>UIC</b>	Unique Identifier Code
<b>UIS</b>	Unique Identifier Service
<b>UN</b>	United Nations
<b>UNAIDS</b>	United Nations Joint Programme on AIDS
<b>UNDP</b>	United Nations Development Programme
<b>UNICEF</b>	United Nations Children's Fund

<b>UNOPS</b>	United Nations Office for Project Services
<b>UNSW</b>	University of New South Wales (Australia)
<b>URC</b>	University Research Corporation
<b>USAID</b>	United States Agency for International Development
<b>US-CDC</b>	United States Centers for Disease Control & Prevention
<b>VAC</b>	Village AIDS Committee(NGO)
<b>VCCT</b>	Voluntary Confidential Counseling & Testing
<b>VHSG</b>	Village Health Support Group
<b>VL</b>	Viral Load
<b>VNRBD</b>	Voluntary Non Remunerated Blood Donation
<b>VSL</b>	Village Savings & Loan scheme
<b>WHO</b>	World Health Organization
<b>WOMEN</b>	Women Organization for Modern Economy & Nursing
<b>WOSO</b>	Women Service Organization (NGO)

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## M&E Framework

Indicators	Type	Baseline (2015)		Target				
		Value	Source	2016	2017	2018	2019	2020
<b>IMPACT INDICATORS</b>								
<b>Global Impact Indicators</b>								
1. HIV Prevalence among general population aged 15-49 years old	Impact	0.62%	Spectrum AIM 2015	0.58%	0.57%	0.55%	0.53%	0.50%
2. Incidence of HIV infections among general population aged 15-49 years-old	Impact	712	Spectrum AIM 2015	645	572	538	505	400
3. AIDS mortality per 100,000	Impact	17.9	Spectrum AIM 2015	15.5	14.0	13.8	13.7	13.2
4. Mother to Child Transmission of HIV rate (MTCT)	Impact	6%	Spectrum AIM 2015	5%	<5%	<5%	<5%	<5%
<b>Impact Indicators for Key Populations</b>								
5. HIV Prevalence among men who have sex with men	Impact	2.3%	MSM IBBS (2014)		2.0%			1.5%
6. HIV Prevalence among trans-genders	Impact	5.8%	NCHADS IBBS (2016)				3.0%	
7. HIV Prevalence among Female Entertainment Workers (FEW)	Impact	4.6%	HSS (2010)	2.0%			1.5%	
7a. HIV Prevalence among Female Entertainment	Impact	14.0%	HSS (2010)	8.0%			7.0%	

Workers who have more than 7 clients/week								
7b.HIV Prevalence among Female Entertainment Workers who have less than 7 clients/week	Impact	3.6%	HSS (2010)	1.5%			1.5%	
8. HIV Prevalence among PWID	Impact	24.8%	DU/IDU Survey (2012)		20.0%			18.0%
9. Gonorrhea prevalence rate among Female Entertainment Workers	Impact	5.30%	SSS (2011)			4%		
10. Chlamydia Trachomatis prevalence rate Female Entertainment Workers	Impact	18.9%	SSS (2011)			15%		
11. Syphilis prevalence rate Female Entertainment Workers	Impact	0.4%	SSS (2011)			0.1%		

OUTCOME INDICATORS								
90-90-90 target indicators								
1. % of PLHIV who knows their HIV status (enrolled in pre-ART and ART) out of all PLHIV	Outcome	79.4%	DMU NCHADS; GARPR 2015	80%	83%	86%	90%	>90%
2. % of PLHIV who were on ART out of all PLHIV	Outcome	75.4%	DMU NCHADS; GARPR 2015	75%	80%	85%	90%	>90%
3. % of PLHIV (adults and children) on ART who have a viral load suppressed during the past year	Outcome	64%	DMU NCHADS; NCHADS Lab, GARPR 2015	70%	75%	80%	85%	>90%

Component 1: B-COPCT: Key Population outcomes								
1. % of MSM reporting condoms use at last time they had anal sex with male partner (non-paid and paid)	Outcome	94.8% (non-paid) 90% (paid)	IBBS (2014)		>95% (non-paid and paid)			>95% (non-paid and paid)
2. % of Transgender reporting condoms use at last time they had anal sex with male partner (non-paid and paid)	Outcome	93.3% (non-paid) 100% (paid)	IBBS (2014)	>95% (non-paid and paid)			>95% (non-paid and paid)	
3. % of Female Entertainment Workers who reporting condom use the last time they had sex with a recent client	Outcome	94.3%;	BSS (2013)	>95%			>95%;	
4. % of Female Entertainment Workers who reporting condom use the last time they had sex with sweetheart	Outcome	52.1%	BSS (2013)	60%			75%;	
5a % of PWID reporting the use of a condom the last time they had sexual intercourse	outcome	72.6%	GARPR 2015	Not available				

5b. % of people who inject drugs reporting the use of sterile injecting equipment the last time they injected	Outcome	68.5%	DU/IDU Survey 2012		60%		>70%	
6. % of High risk men who have sex with men reached at least once per month by these activities: (a) IEC on HIV prevention (b) Condom distribution	Output	57%	Program report 2014		75%	80%	85%	90%
7. % of Risk men who have sex with men reached at least once per quarter by these activities: (a) IEC on HIV prevention (b) Condom distribution	Output	57%	AEM 2014		75%	80%	85%	90%
8. % of Transgender reached at least once per month by these activities: (a) IEC on HIV prevention (b) Condom distribution	Output	67.0%	PUDR report 2015		75%	80%	85%	90%

9. % of High risk Female Entertainment Workers reached at least once per month by these activities: (a) IEC on HIV prevention (b) Condom distribution	Output	83%	PUDR 2015		85%	90%	>90%	>90%
10. % of Risk Female Entertainment Workers reached at least once per quarter by these activities: (a) IEC on HIV prevention (b) Condom distribution	Output	83%	PUDR 2015		85%	90%	>90%	>90%
11. % of PWID reached with HIV prevention program - defined package of services	Output	35.0%	PUDR 2015		60%	65%	70%	>80%
12. % of High Risk MSM who received STI services in the last 3 months	Output	n/a	n/a		70%	75%	80%	>80%
13. % of Risk MSM who received STI services in the last 6 months	Output	15% (2013)	KHANA report		70%	75%	80%	>80%
14. % of Transgender who received STI services in the last 3 months	Output	n/a	n/a		70%	75%	80%	>80%

15. % of High Risk Female Entertainment Workers who received STI services in the last 3 months	Output	n/a	n/a		70%	75%	80%	>80%
16. % of Risk Female Entertainment Workers who received STI services in the last 6 months	Output	2467	IBBS (2015)	NA	70%	75%	80%	>80%



Component 2: B-COC: Outcomes for Quality & Attention of the Continuum of Care								
1. % of Adult PLHIV ( $\geq 15$ years old) who are on ART out of all Adult PLHIV	Outcome	74.0%	DMU NCHADS; GARPR 2015	75%	80%	85%	90%	>90%
2. % of Children PLHIV (<15 years old) who are on ART out of all children living with HIV	Outcome	98.9%	DMU NCHADS; GARPR 2015	>95%	>95%	>95%	>95%	>95%
3. % of Adult PLHIV on ART still alive 12 months after starting ART	Outcome	78.5%	DMU NCHADS, GARPR 2015	80%	83%	85%	87%	>90%
4. % of Adult PLHIV on ART still alive 24 months after starting ART	Outcome	73.1%	DMU NCHADS GARPR 2015	76%	79%	82%	85%	>85%
5. % of Adult PLHIV on ART still alive at 60 months after starting ART	Outcome	71.94	DMU NCHADS 2015	74%	76%	78%	80%	>80%
6. % of Children PLHIV (<15 years old) on ART still alive at 12 months after starting ART	Outcome	83.7%	DMU NCHADS GARPR 2015	86%	88%	90%	>90%	>90%
7. % of Children PLHIV (<15 years old) on ART still alive at 24 months after starting ART	Outcome	82.6%	DMU NCHADS GARPR 2015	84%	86%	88%	90%	>90%
8. % of Children PLHIV (<15 years old) on ART still alive at 60 months after starting ART	Outcome	82.31%	DMU NCHADS 2015	84%	86%	88%	90%	>90%

9. % HIV-infected people with first CD4 cell count < 200 cells/ml during the past 12 months	Output	46.7%	DMU NCHADS, GARPR 2015	45%	44%	43%	42%	<40%
10. % of Newly identified patients adults (aged ≥15years old) who started ART within 2 weeks	Output	72.94%	DMU NCHADS 2015	74%	76%	78%	80%	>80%
11. % of Newly identified positive children (aged <15years old) who started ART within 2 weeks	Output	68.33%	DMU EID/ART DB 2015	70%	74%	76%	78%	>80%
12. % of Adults (aged >15years old) who were on ART for 12 months or more who received viral load testing at least one per year	Output	34.46%	DMU NCHADS 2015	50%	65%	75%	85%	>90%
13. % of Children PLHIV (<15 years old) who were on ART for 12 months or more received viral load testing at least once a year	Output	38.88%	DMU NCHADS 2015	50%	65%	75%	85%	>90%
14. % of Adult PLHIV (≥15 years old) newly enrolled in HIV Care who were symptom screened for TB at first visit	Output	88.7%	DMU NCHADS 2015	90%	>90%	>90%	>95%	>95%

15. % of Adult PLHIV (≥15 years old) enrolled in HIV Care who were symptom screened for TB at last visit	Output	78.49%	DMU NCHADS 2015	80%	85%	87%	90%	>90%
16. % of Children PLHIV (<15 years old) newly enrolled in HIV Care who were symptom screened for TB at first visit	Output	N/A	Cannot be calculated because has no information recorded in tools	N/A	60%	70%	80%	>80%
17. % of Children PLHIV (<15 years old) enrolled in HIV Care who were symptom screened for TB at last visit	Output	N/A	Cannot be calculated because has no information recorded in tools	N/A	60%	70%	80%	>80%
18. % of Adult PLHIV (≥15 years old) newly enrolled in HIV Care starting IPT	Output	25.0%	DMU NCHADS GARPR 2015	27%	30%	>30%	>30%	>30%
19. % of Children PLHIV (<15 years old) newly enrolled in HIV Care starting IPT	Output	NA (not included in tool)	N/A	N/A	25%	30%	>30%	>30%

Component 3: B-LR: Outcomes for Elimination of Mother-to Child Transmission								
1. % of PW with known HIV status	Output	86.1%	GARPR 2015	70%	83%	86%	88%	90%
2. % of HIV+ pregnant women who receive ARVs to reduce Mother-to-Child-transmission (MTCT)	Output	83.5%	GARPR 2015	85%	90%	>90%	>90%	>90%
3. % of HIV-exposed infants who initiated ARV prophylaxis	Output	71%	GAPRP 2015	75%	80%	85%	90%	>90%
4. % of HIV-exposed infants started on cotrimoxazole prophylaxis within 2 months of birth	Output	58.6%	GAPRP 2015	65%	70%	80%	90%	>90%
5. % of Infants born to HIV-positive women receiving a virological test for HIV within 2 months of birth	Output	76.6%	GAPRP 2015	80%	85%	90%	>90%	>90%

**Cross-cutting Outcomes**

**Component 4: B-IACM/PNTT**

1. % of OD implementing B-IACM/PNTT	Output	2	NCHADS ACM Report 2015	44%	100%	100%	100%	100%
2. % of OD tracking the HIV cascade at monthly GOC meeting	Output	19%	NCHADS	44%	100%	100%	100%	100%
3. % of HIV-positive adults receiving HIV care whose partner status is known	Output	N/A	NCHADS report	TBD	TBD	TBD	TBD	TBD

Component 5: CBPCS								
1. Number of OD implementing new CBPCS model	Output	0	NGO Report (KHANA, CRS, RHAC, WOMEN and CHEC)	44	50	60	65	70
Component 6: HTC								
1. % of Public Health facilities (HC + RH/NH) implementing HTC	Output	71.5%	Health sector progress report 2016	>95%	>95%	>95%	>95%	>95%
2. Number of people who received HIV testing and counseling (Adults + children) in the past 12 months and know their results	Output	523,315 (516,887 + 6428)	UA Health Sector 2015, Indicator 1.16	550,000	590,000	630,000	670,000	700,000
3. % of TB patients tested for HIV	Output	90%	CENAT		95%	95%	95%	95%
4. Number and % of High Risk MSM tested for HIV	Output	n/a	n/a		80%	85%	90%	>90%
5. % of Risk MSM tested for HIV	Output	86.80%	KHANA report		80%	90%	90%	>90%
6. % of transgender tested for HIV	Output	50.83%	KHANA report		75%	80%	85%	90%
7. % of High Risk EWs tested for HIV	Output	70.71%	KHANA report		85%	90%	>90%	>90%
8. % of Risk EWs tested	Output	52.26%	KHANA report		80%	85%	>90%	>90%

9. % of PWID that have received HIV test in the past 6 months and know their results	Output	26.1%	NGOs report 2014	60%	70.0%	80.0%	90.0%	90%
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Component 7: Laboratory Services								
1. % of Labs with satisfactory performance in EQA/PT	Output	98.5%	EQAS-HIV Round 1 2015 (62/65VCCT sites)		100%	100%	100%	100%
2. Number of CD4 labs participating in EQAS	Output	8	CD4 laboratory		8	8	8	8
3. Number of VL labs participating in EQAS	Output	8	VL laboratory		8	8	8	8
4. % of VL sample successfully tested within 2 weeks	Output	96%	NCHADS Lab 2015		95%	95%	100%	100%
5. % of rejected samples received at the lab for VL , DNA PCR	Output	1.2% (2013)	NCHADS Lab		<1%	<1%	<1%	<1%

Component 8: Logistics & Supply Management								
1. % of ARV sites experiencing stock-out of any ARV drugs in the past 12 months	Output	0%	NCHADS EWI, GARPR 2015	0%	0%	0%	0%	0%
Component 9: STI Treatment								
1. Number of existing Family Health Clinics (FHCs) being upgraded	Output	2	Program Report	4	6	8	10	12
2. % of STI patients who knows their HIV status	Output	3531	VCCT Annual Report 2015 NCHADS	85%	90%	95%	95%	95%
3. Proportion (%) of women accessing ANC services who are tested for HIV and syphilis at first visit	Output	43.4%	GARPR 2015	50%	83%	86%	88%	90%



4. Proportion (%) of PWs screened reactive received confirmatory syphilis test (RPR)	Output	59.2%	B-LR Report (NMCHC) 2015	75%	90%	95%	>95%	>95%
5. Proportion (%) of PW positive for syphilis (confirmed RPR positive) who received syphilis treatment	Output	91.4%	GARPR 2015	>95%	>95%	>95%	>95%	>95%
6. Proportion (%) of partners of syphilis-positive PWs received syphilis treatment	Output	51%	LR/PMTCT Reports (NMCHC)-2015	55%	60%	65%	70%	>75%
7. Proportion (%) of EW receiving STI/RTI check-up who are diagnosed for genital or anal ulcer	Output	0.55% (2015)	DMU NCHADS;STI report 2015		<0.5%	<0.5%	<0.5%	<0.5%
8. Proportion (%) of MSM receiving STI/RTI check-up who are diagnosed for genital or anal ulcer	Output	2.14%	DMU NCHADS;STI report 2015		<1%	<1%	<1%	<1%
9. Proportion (%) of EW receiving STI/RTI check-up who are diagnosed for any STDs	Output	32.59%	DMU NCHADS;STI report 2015		20%	<20%	<20%	<20%
10. Proportion (%) of MSM receiving STI/RTI check-up who are diagnosed for any STDs	Output	24.9%	DMU NCHADS;STI report 2015		20%	<20%	<20%	<20%
<b>Component 10: Strategic Information</b>								
1. IBBS conducted among key population groups	Output	MSM in 2014	NCHADS	TG/FEW	MSM/PWID	SSS	Youth & Factory workers / FEW	MSM/TG

2. Size Estimation studies conducted for each key population every 3 years	Output	DU/IDU (2007) & EW (2012)	NCHADS	FEW		Youth & Factory workers / FEW		
3. Modeling/ conducted review HIV incidence to monitor progress towards elimination	Output	1 (2014)	AEM NCHADS	1		1		1
4. National HIV research agenda developed and updated on regular basis	Output	1 (2007)	Research Unit NCHADS	1		1		1
<b>Component 11: Program Management</b>								
1. % of ART Clinics send the report to NCHADS on time	Output	66%	NCHADS	70%	75%	80%	85%	90%