Kingdom of Cambodia
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Ministry of Health

Standard Operating Procedures (SOP) to Initiate a Linked Response for Prevention, Care, and Treatment of HIV/AIDS and Sexual and Reproductive Health Issues

December 2007

December 12, 2007

HE Prof. Eng Huot
Secretary of State for Health

Dear Prof. Eng Huot;

The two national centers, NCHADS and NMCHC, have worked with all relevant stakeholders to draft this SOP for the Linked Response for Prevention, Care, and Treatment of HIV/AIDS and Sexual and Reproductive Health Issues.

We would like to submit this SOP for approval from the Ministry of Health.

Sincerely,

Dr. Mean Chhi Vun
Director
NCHADS

Prof. Koum Kanal
Director
NMCHC

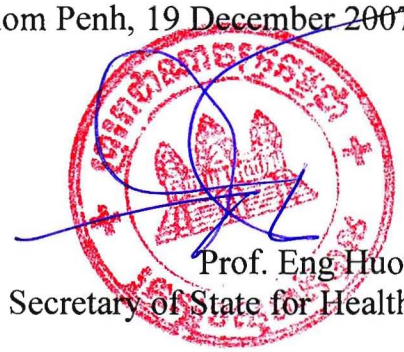
Foreword

The Ministry of Health recognizes the importance of the Linked Response approach for the Prevention, Care, and Treatment of HIV/AIDS and Sexual and Reproductive Health Issues. The Ministry appreciates that the Linked Response approach is the appropriate strategy for implementation at the Operational District level. This approach will contribute to strengthening Cambodia's overall health care system within Operational Districts, strengthening existing reproductive health services, and increasing access to HIV prevention education, testing, care and treatment.

To implement the Linked Response approach, the two national programs, NCHADS and NMCHC, will work in close collaboration with all stakeholders including donor agencies, UN agencies, civil society and community-based organizations. Good partnership will be essential to supporting the implementation of the Linked Response approach.

The Ministry of Health endorses the Linked Response approach for the Prevention, Care, and Treatment of HIV/AIDS and Sexual and Reproductive Health. The Ministry of Health expects that all partners will work closely together to strongly support the implementation and monitoring of this approach.

Phnom Penh, 19 December 2007



Prof. Eng Huot
Secretary of State for Health

Acknowledgements

NCHADS and NMCHC would like to acknowledge CPN+, RHAC, KHANA, RACHA, WOMEN, the Prey Veng PHD, the ODs of Neak Loeung, Preah Sedach, Kampong Trabek and Mesang, WHO, UNAIDS, UNICEF, UNFPA, USAID, CDC-GAP, DFID, CHAI, and all other partners who contributed to the development of the Linked Response approach for the Prevention, Care, and Treatment of HIV/AIDS and Sexual and Reproductive Health Issues.

Without the commitment and hard work of these partners, this SOP could not have been completed.

Phnom Penh, 7 December 2007

Dr. Mean Chhi Vun
Director of NCHADS

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Annexes

List of Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ART	Anti-retroviral Treatment
ARV	Anti-retroviral
AZT	Zidovudine
CAC	Comprehensive Abortion Care
CBO	Community Based Organization
CDC-GAP	Center for Disease Control-Global AIDS Programme from United States of America
CHAI	Clinton Foundation for HIV/AIDS Initiative
CoC	Continuum of Care
CPN+	Cambodian People Living with HIV and AIDS Network
DBS	Dried Blood Spot
DFID	United Kingdom Department for International Development
FBO	Faith Based Organization
FP	Family Planning
HAART	Highly Active Antiretroviral Therapy
HBC	Home-based Care
HC	Health Center
HIV	Human Immunodeficiency Virus
HPITC	Health Provider Initiated Testing and Counseling
HR	Human Resource
IEC	Information, Education and Communication
KHANA	Khmer HIV/AIDS NGO Alliance
M & E	Monitoring and Evaluation
MMM	Mondul Mith Chuoy Mith (Friends Helping Friends) Support Group
MNBH	Maternal and Newborn Health
MoH	Ministry of Health
NCHADS	National Center for HIV/AIDS, Dermatology and STD
NGO	Non-Governmental Organization
NMCHC	National Maternal and Child Health Center
NVP	Nevirapine
OD	Operational District
OI	Opportunistic Infection
PAC	Pediatric AIDS Care
PHD	Provincial Health Department
PLHA	People Living with HIV and AIDS
PLHASG	People Living with HIV and AIDS Support Group
PMTCT	Prevention of Mother-to-Child Transmission (of HIV)
RACHA	Reproductive and Child Health Alliance
RH	Referral Hospital
RHAC	Reproductive Health Association of Cambodia
SOP	Standard Operating Procedures
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infection
TB	Sexually Transmitted Infection
TBA	Traditional Birth Attendant
UA	Universal Access

UN	United Nations
UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCCT	Voluntary Confidential Counseling and Testing
WHO	World Health Organization
WOMEN	Women Organization for Modern Economy and Nursing

Definitions

Cluster: A group of hospitals and health centers within a designated geographic area that form a given "linked response" network.

Hub: The referral hospital in a cluster that provides patients with the most comprehensive set of services. The hub is the link to the national hospitals and labs in Phnom Penh and usually the only facility in a cluster that can provide pediatric OI/ART services. The hub also has the most advanced laboratory facilities.

Satellite: A Referral Hospital (RH) facility in a cluster that can provide at least HIV/AIDS testing and counseling, ANC, and PMTCT services. These hospitals usually have existing VCCT services.

Sub-satellite: A Health Center (HC) facility in a cluster that has been chosen to become an ANC/VCCT/PMTCT center for a number of reasons, including but not limited to, HR capacity, existing facility structure, and geographic location for ease of patient access.

Standard Operating Procedures (SOP) to Initiate a Linked Response for Prevention, Care, and Treatment of HIV/AIDS and Sexual and Reproductive Health Issues

1. Introduction

It is internationally recognized that linkages between reproductive health and HIV are crucial to comprehensive management of patients who need concomitant care for related health conditions.

In Cambodia, two National Centers of Health are responsible for different aspects of reproductive health. The National Center for HIV/AIDS, Dermatology and STD (NCHADS) is responsible for the health sector response to HIV/AIDS and STI care and treatment, which is implemented at the operational district level through a Continuum of Care package and STI control. This package includes VCCT and HIV testing among pregnant women as entry points for PMTCT services and inpatient and outpatient care for HIV/AIDS with OI and ART services. The Continuum of Care package also offers interactive services between health services and communities (HBC, MMM, PLHASG) and HIV prevention with STI clinics. The National Maternal and Child Health Center (NMCHC) is responsible for other reproductive health services, including antenatal care, PMTCT, safe delivery, maternal and newborn health (MNBH), family planning (FP), and postpartum care.

The current health system in Cambodia provides access to HIV/AIDS, OI/ART, STI, ANC, family planning and maternal and newborn health. However, these closely related services are often not available at the same health facility, and some operational districts do not offer the full package of services. Because health staff is often specialized (FP, STI management, ANC etc.), they miss opportunities to provide comprehensive information and to refer patients to relevant health centers for appropriate treatment. As a result, the linkages between related health services are weak, as well as those between health services and the community at large. Some patients may not access services because of geographic and resource constraints. Therefore comprehensive management of patient health is lacking.

It is important to note that a robust PMTCT program is critical to ensuring universal access to the Continuum of Care. The national PMTCT program began in 2000 with the formation of a Technical Working Group and the PMTCT Secretariat. A PMTCT pilot project was established in 2001 at the National Maternal and Child Health Center (NMCHC) offering HIV counseling and testing to pregnant women and their partners and single dose Nevirapine to HIV-positive mothers during labor and their children after delivery. In 2003, the pilot project was scaled up to eight sites, and, in September 2005, the ARV prophylaxis guidelines were revised inline with WHO recommendations.

As of November 2007, there were 77 PMTCT sites in Cambodia. In 2006, a total of 308,277 women were seen for a first ANC visit at a government ANC clinic and 29,677 received an HIV test at a PMTCT site. A total of 644 HIV-positive pregnant women were enrolled for ANC at PMTCT sites (392 diagnosed as HIV-positive at

PMTCT ANC sites and 252 previously known to be HIV-positive who were referred to the PMTCT site). NMCHC estimated that in 2006 the PMTCT program tested 7.4% of Cambodia's women for HIV and provided prophylaxis to 7.3% of the total number of HIV-exposed newborns.

Under the current PMTCT program, pregnant women diagnosed as HIV-positive at a PMTCT site are referred to the nearest OI/ART clinic to receive either HAART or ARV prophylaxis and encouraged to go to the nearest PMTCT maternity ward for delivery. Primary prevention information is given to women and their partners who test negative. ANC, family planning services and infant follow-up / immunizations are provided at all health centers. However, the following factors contribute to the low uptake of services:

- At least 25% of pregnant women in Cambodia do not attend public ANC services.
- The majority of existing PMTCT sites only draw from a catchment area similar to that of the HC or RH where PMTCT services are located and provide poor access to testing for women served at other sites.
- 25% of women accessing ANC services at PMTCT sites in the first quarter of 2007 were not tested for HIV.
- Although referral from PMTCT sites to OI/ART sites for antenatal ARV management has been widely implemented, challenges relating to transportation and other barriers lead to a drop-off in the number of HIV-positive women identified at PMTCT sites who receive the appropriate antenatal regimen.
- HIV-positive women are encouraged to deliver at a PMTCT maternity site but only about 50% of identified HIV-positive women actually do. Delivery at home is still preferred by many women, especially in rural areas, and Nevirapine for the women and newborns and AZT/3TC tail are not currently available for deliveries outside of the PMTCT maternity sites.
- The HIV status of more than 70% of women who deliver at PMTCT maternity sites is unknown at delivery. HIV testing is currently not offered during labor or in the immediate postpartum period.

The proposed model aims to improve linkages of services at the operational district level by strengthening referral mechanisms within and between community-based support and facility-based services. This strategy will ensure that patients can receive comprehensive reproductive health and HIV/AIDS prevention, care, and treatment, while paying special attention to strengthening and scaling-up PMTCT services.

2. Rationale

Why a linked response network of HIV/AIDS, OI/ART, STI, ANC, safe delivery, family planning, pediatric health care and maternal and newborn health, should be established and integrated into the health care system at the OD level:

- The number of missed opportunities for comprehensive care is currently large. By building a Linked Response network with a strong referral system, more patients will be seen by the appropriate health care providers. A greater array of Linked services will encourage a greater number of patients to seek treatment at all services. For example, STD clinics, VCCT and ANC services will see an increase in use by the overall population, especially by entertainment workers.

- Currently, the uptake of PMTCT services is very low. As previously mentioned, a robust PMTCT program is essential to curbing the spread of HIV from mothers to children, and into the general population.

- Cambodia's overall healthcare system is constrained by limited resources. Currently, many patients do not follow-up on treatment because they cannot afford to make multiple trips to health centers. Strong linkages between community support groups, home based care teams, facility based outreach teams and facility services will facilitate referrals, education and transportation to appropriate services.

Once a Linked Response network is in place, it will ease the start-up of currently non-existent health care services, such as adolescent health care. New services will have a greater chance of success upon initiation of a strong referral system.

3. Objectives

The main objectives of Linked Response are:

- Contribute to the strengthening of Cambodia's overall health care system including the system within ODs.
- Strengthen existing reproductive health services.
- Increase access to HIV prevention education, testing, care and treatment.

4. Strategy for achieving objectives

Linked Response will be implemented by:

Furthering Education: Health care providers (doctors, nurses, midwives etc.) will be informed on how best to use Linked Response to provide comprehensive care for patients. This will be accomplished by updating current literature, as well as through orientation and training workshops. Health care providers and home-based care teams at new Linked Response network sites will receive formal training on VCCT testing and counseling, PMTCT (prophylaxis, infant feeding, etc) and DBS collection.

Integration of IEC materials: IEC materials should be consistent with one another.

- IEC materials should never be duplicated.
- Services should offer any information they have to other services in order to cut down the manufacturing costs of new materials.

Strengthening patient record keeping and data management throughout the Linked Response network, especially with regards to HIV-positive pregnant women and HIV-exposed infants. Revision of patient referral cards, patient registers, patient follow-up guides for facility and community support providers, and updated reporting format will support this goal.

Strengthening referrals between HIV/AIDS, OI/ARV, STI, ANC, family planning, safe abortion, adolescent health, and maternal & newborn health, as well as strengthening logistics and data management. All components of the health services should be consistently operational. By first looking at core packages, we can note how they can be expanded to include other services.

ANC should provide its core package. In order to support Linked Response, all pregnant women should be encouraged to seek antenatal and maternity care and should receive referrals to family planning counseling. STI symptomatic clients should be treated through syndromic management at the HC or referred to STI Clinic for care. Clients with unknown HIV status should be encouraged to receive HIV testing. ANC midwives or female nurses should incorporate HIV activities into their regular immunization outreach activities at the village level. This intervention should target villages situated at least ten kilometers from a health facility. Male partner involvement in ANC care should be actively encouraged and HIV testing should be made available to male partners. The importance of knowing the HIV-status of the whole family and keeping a husband/partner involved in a woman's pregnancy should be emphasized. Women with known HIV-positive status should be referred to the nearest OI/ART site for enrollment in Coca and CD4 testing. Women with CD4 count greater than 350 should receive ARV prophylaxis at a Linked Response facility. HIV-positive pregnant women should receive information about the importance and availability of PMTCT services.

VCCT should provide its core package. In order to support Linked Response, VCCT should also educate all clients (adult males and females, and adolescent males and females) about STI symptoms and the availability of STI services. If a client reports symptoms, referral to ANC or STI clinic should be made. If a client is HIV-positive, the VCCT counselor should immediately refer the patient to OI/ART and to HBC. HIV-positive clients should be encouraged to bring their husbands, wives or other sexual partners to the VCCT facility for HIV testing. All women who test HIV-positive should be referred to Family Planning Services. Women who test HIV-positive and are pregnant or may be pregnant should be referred to ANC/PMTCT and ANC services. All clients who test negative should be provided with information on prevention methods and referred to other services as needed. Where available, adolescents may be referred to adolescent health services.

STI care should provide its core package. In order to support Linked Response, all clients and their respective partners should be encouraged to receive HIV testing.

Dual protection (STI protection and contraception) should be promoted to female clients. Female clients who may be pregnant should be encouraged to seek pregnancy testing services. Women of child-bearing age should be encouraged to visit family planning and pregnant women should be encouraged to visit ANC services. Where available, adolescents may be referred to adolescent health services, or any other relevant service listed above.

Family Planning should provide its core package. In order to support Linked Response, family planning should educate women about birth spacing, the prevention of HIV and STIs, and PMTCT services. All clients should be encouraged to receive HIV testing. All pregnant clients should also be seen for ANC services. HIV-positive women should be referred to a site with PMTCT services. Female adolescents should be referred to any relevant service listed above.

Comprehensive Abortion Care (CAC) should provide its core package. Safe Abortion and Post Abortion Care (SAPAC) services may be integrated into the Linked Response system to support comprehensive care for women. SAPAC should encourage its clients to seek family planning services and promote HIV and STI testing for women and their partners at the nearest STI and VCCT facilities.

Adolescent Health services may be incorporated into the Linked Response referral system to increase access to and the quality of care and treatment for adolescents. Currently in Cambodia there are two proposed models for the delivery of adolescent health services. The first model is implemented on a local-level by community-based organizations (CBOs) and home-based care (HBC) providers who provide educational services and refer youth to comprehensive medical services at RHs. The second model is based on providing youth-friendly informational and support counseling within the RH facilities. This model is implemented by building resource centers with youth counselors who can direct their clients to other services at the RH. The model of Adolescent Friendly Reproductive Health (AFRH) is piloted in some HCs.

Maternal and Newborn Health Service should provide its core package. In order to support Linked Response, all clients should be encouraged to receive HIV testing. Mothers (or their blood samples) should be sent to the HIV-testing site. Family planning services should be promoted to all mothers. HIV screening tests will be offered to those women with unknown HIV status who are less than six centimeters dilated at the time of presentation. The HIV-positive mothers should receive ARV prophylaxis during labor and should be discharged with drugs to complete regimen. HIV-exposed newborns should receive the appropriate prophylaxis tail, and be referred to pediatric AIDS care or facilities with DBS collection and Cotrimoxazole prescription services for immediate follow-up, and HIV-positive mothers should be referred to OI/ART to enroll in the CoC.

OI/ART should provide its core package. In order to support Linked Response, OI/ART should also refer HIV-positive clients to TB screening. HIV-positive women should be referred to family planning and ANC/PMTCT if pregnant. Ideally, all of these services will be within the same RH complex as the OI/ART clinic. To do this, a referral linkage between OI/ART Hub and the HCs in its catchments must be established.

HBC teams (Home Based Care) must work in an expanded capacity to provide community outreach as well as patient follow-up services. HBC teams should also build a strong relationship with other HBC teams in their local area to ensure good coordination among partners and full coverage of catchment populations. They will work closely with RHs and HCs in order to scale up referrals and initiate follow-ups. HBC teams should be in close contact with RHs and HCs to identify new patients to be monitored. They may also be called upon to support facility based outreach teams in the provision of service at the village level. Teams may transport or facilitate the transport of patients to RHs and HCs for additional services. They will also provide information to patients about when and where they need to go for follow-up care and treatment. HBC teams must also strongly encourage adherence to drug and care regiments.

HPITC (Health Provider Initiated Testing and Counseling) is vital for the provision of complete care to clients who visit Non-VCCT health facilities. All health professionals (doctors, nurses, midwives and dentists) should encourage clients to seek HIV testing and counseling at the nearest VCCT site. ANC and TB patients should be especially encouraged to be tested for HIV, as should those patients who show symptoms associated with HIV/AIDS. Prior to testing, health professionals who work at maternity wards, STI clinics, tuberculosis, pediatric, and infectious wards should share information with patients about the benefits of knowing his or her HIV status. If the patient seen at a health care facility that does not house VCCT, blood should be taken from the patient and then tested at the nearest VCCT laboratory site. Site specific sample transport mechanisms will be developed with each OD.

Outreach to village health volunteers, traditional birth attendants (TBA) and unofficial medical practitioners will play an important role in bringing patients into health care facilities for testing, counseling, care and treatment. These individuals and health care providers typically have the strongest relationships with their communities, and their clients trust and respect their opinions. By working closely with these individuals, facility-based providers will be able to identify more patients in need, and increase their patients' incentives to seeking care in the Linked Response network.

5. Activities

- **Materials:** Core package training for VCCT, PMTCT, STI, ANC, family planning, PAC, maternal and newborn health, CAC, and DBS collection should be performed as needed, and training materials distributed accordingly. NCHADS and NMCHC will not develop a large independent curriculum, but rather a combined training course for VCCT and PMTCT. There will not be a large amount of new literature; the goal is to link and update current information to make it more accessible to those who need it. The PMTCT Linked Response poster will be updated to reflect the latest care and treatment sequence for pregnant women and HIV-exposed infants. PMTCT treatment regimen and follow-up guides will be developed for the facilities and the HBC teams to reference when caring for HIV-positive mothers and exposed infants. Existing registers, referral cards and monthly reports will be assessed and revised to support the Linked Response.

- **Orientation Workshop:** Orientation Workshops will provide a forum for health care staff to discuss the core packages of their respective services and an opportunity to introduce all health care staff to the Linked Response concept. During these two-day Orientation Workshops, core services for HIV/AIDS, OI/ARV, STI, ANC, Family Planning, PAC and Maternal and Newborn Health will be explained by key players. Opportunities for new referrals will be highlighted to all health care providers in order to support Linked Response. The workshop will be open to all health care staff in the cluster who wish to attend and participate. The key players should be the heads of the respective departments taking part in Linked Response. These include OI/ART, STI, ANC, Family Planning, PAC and Maternal and Newborn Health. The workshops will be facilitated by staff from the national centers in Phnom Penh. Ideally, there will be one representative from NCHADS and one from NMCHC present at all workshops. The number of participants in a single orientation workshop should not exceed 25–30 people, depending on staff availability. Orientation workshop participants should be given a list of all the relevant services' core packages upon arrival. Further workshops will be intended for all health care staff. In these workshops, potential referrals will be discussed by each respective service in order to further health care staffs' knowledge of linkages.

- **Outreach Initiatives**: These efforts will vary from district to district based on the local situation. Ideally, non-governmental organizations (NGOs) working on sexual and reproductive health issues, HBC teams, and health center staff should arrange meetings and information sessions with TBAs and other informal health care providers in their area. These sessions should educate attendants on the Linked Response network and the services provided, and encourage these individuals to work with the public system to provide higher quality care to their patients. A strategy should be developed to encourage cooperation between these two types of health care delivery within the community.

- **Referrals:** OD specific charts detailing where patients could potentially be referred to should be hung up or placed under health care providers' glass desks. The charts should be easily accessible and readily available for all health care providers. With regards to referring patients to other health care sites, health care providers should have a site specific list of the nearest STI, OI/ART VCCT, ANC (PMTCT), Family Planning, PAC, Maternal and Newborn Health, TB (HIV) sites – including their distances, how best to get there and opening times in order for patients to be able to access these services in a single trip away from home. The providers of each service should actively encourage patients to take advantage of other needed and available services at the respective health facility. If the necessary services are not offered at the facility, the patient should be referred to another location that offers the sought after service. Patients must be given the updated standardized referral cards (see Annex 1) and should also be informed on how best to travel to these sites. If there are community support groups and HBC teams available to provide transportation assistance, the health facility should create a link between them and the patient.

6. Linked Response Management

NCHADS and NMCHC in collaboration with partners will demonstrate the Linked Response model in Prey Veng province, an area selected because of its resource and infrastructure limitations.

At the central level, the Linked Response networks will be coordinated by NCHADS. NMCHC will be encouraged to cooperate in program management at all levels. At the cluster level, the management structure will be as follows:

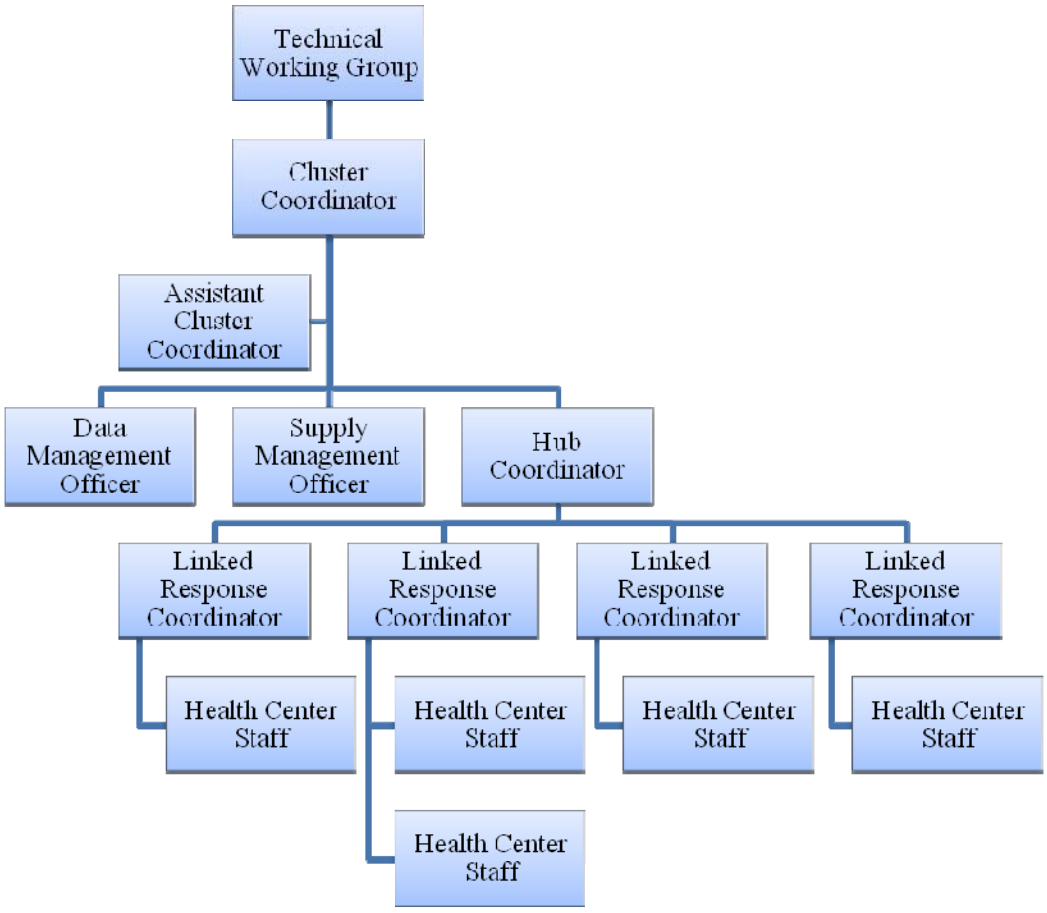
Cluster Coordinator: OD Director of the hub's OD
Assistant Cluster Coordinator: HIV/AIDS OD Coordinator of the hub's OD
Hub Coordinator: Deputy Director of the hub's RH
The management team and technical support staff will be based at the hub RH.

The Linked Response coordinator at the satellite level will be the Director or Deputy director OD. The staff at the sub-satellite level will be responsible for their activity as a group.

The Cluster Coordinator will be responsible for organizing all of the cluster health care providers every 3 months for a quarterly coordination meeting. The central level managers from NCHADS will be required to attend this meeting.

The HIV OD Coordinator/Linked Response manager at the satellite level will be responsible for calling a meeting for his/her OD every quarter; participants will include health care providers, community support groups, HBC teams, NGO staff, and any other relevant parties. These meetings should occur prior to the cluster-wide quarterly meeting so as to inform the discussion and agenda. Meetings at the central level with NGOs and other important partners will be held as needed.

Linked Response Structure



Note: This structure will no longer exist when each OD is able to take responsibility for LR activities in its catchments area.

Hub Coordination Team Roles and Responsibilities

1. **Provincial Linked Response Coordinator**
   a) Assist coordination to ensure the implementation of the Linked Response project operates smoothly, meets the objectives and solves related problems;
   b) Coordinate the overall management, logistics and supply management of OI/ARV, reagents, and consumables, and reporting systems in the province;
   c) Facilitate and coordinate the referral systems and follow-up linkages within hospital, referral and follow-up systems between hospital/health centers and NGOs working for both prevention and home base care, to support referral and follow-up of PLHAs, and specially emphasis on pregnant women to access to ANC, Delivery, Prophylaxis and Treatments services, in collaboration with PMCT coordinator;

d) Attend the coordination meeting organized by OD where the project is implemented;
f) Mobilize human, material and financial resources to support the project;
g) Provide reports and recommendation of the project to NCHADS and the NMCHC.

2. Cluster Coordinator for Linked Response

a) Coordinate to ensure the project implementation at the cluster operates smoothly, related problems are solved, and targets are met.
b) Take ownership and initiative to develop work plans and set the targets;
c) coordinate on the overall management, logistics and supply management of OI/ARV, reagents, and consumables, and reporting systems in Hub;
d) Establish the referral systems and follow-up linkages within hospital, referral and follow-up systems between hospital/health centers and NGOs working in both prevention and home based care. Support referral and follow-up of PLHAs with special emphasis on pregnant women to access to ANC, Delivery, Prophylaxis and Treatments services;
e) Organize and lead the regular quarterly coordination meetings of the Hub, and NGOs that direct involve in the project implementation;
f) Mobilize human, material and financial resources to support the project;
g) Provide reports and recommendations for the project to the Provincial Health Department, the Provincial AIDS Office, NCHADS and NMCHC.

2. **Assistant to Cluster Coordinator**.

a) Assist Cluster Coordinator to ensure the project implementation in Hub ODs, operates smoothly, related problems are solved and targets are met;
b) Coordinate the overall management, logistics and supply management of OI/ARV medicines, reagents, and consumables, and reporting systems in the Hub;
c) Coordinate the referral systems and follow-up linkages within the hospital, referral and follow-up systems between hospital/health centers and NGOs that work in both prevention and home base care. Support the referral and follow-up of PLHAs with specially emphasis on pregnant women to access to ANC, Delivery, Prophylaxis and Treatments services;
d) Organize and report on the regular quarterly coordination meetings of the Hub, and NGOs that are directly involved in the project implementation;
e) Coordinate the mobilization of human, material and financial resources to support the project;
f) Provide reports and recommendations for the project to the Provincial Health Department, the Provincial AIDS Office, and NCHADS

3. **Hub-Coordinator**
    a) Ensure the referral and follow-up patients who are referred from Hub, HCs and communities to access to different services within RH and ensure that all referral cases occur within the systems that can be monitored and evaluated;
    b) Coordinate and follow-up the referral of Pregnant PLHA women from communities, health centers, to access to care and treatment services, and laboratory services in RH;
    c) Attend the coordination meetings at Hub OD.

4. **Logistic and Supply Management Officer**
    a) Quantify supply needs based on the data provided by data management officer;
    b) Manage the logistics and supply management of drugs, reagents and consumables at the Hub;
    c) Monitor the shortages of stock, expiring products. Fill stock shortages;
    d) Prepare requests for drugs, reagents and consumables to CMS;
    e) Provide feedback to Hub Coordinator to mobilize drugs, reagents and consumables from one service to support others to avoid the temporary interruption.

5. **Data management Officer at Hub**
    a) Collect and enter data from OI/ART, VCCT, PMTCT, ANC and, Reproductive Health, CAC, STI, and others if available from Hub into the computer data base system;
    b) Provide regular reports to all relevant services of OD NL/PHD/NCHADS, and especially the Hub logistic and supply management officer to prepare quantification, and projection of needed supplies.

6. **PMTCT or MCH Coordinator**
    a) Link HIV to STI *and* Reproductive health services.
    b) Attend the coordination meeting organized by OD where the project is implemented.

7. Technical Support

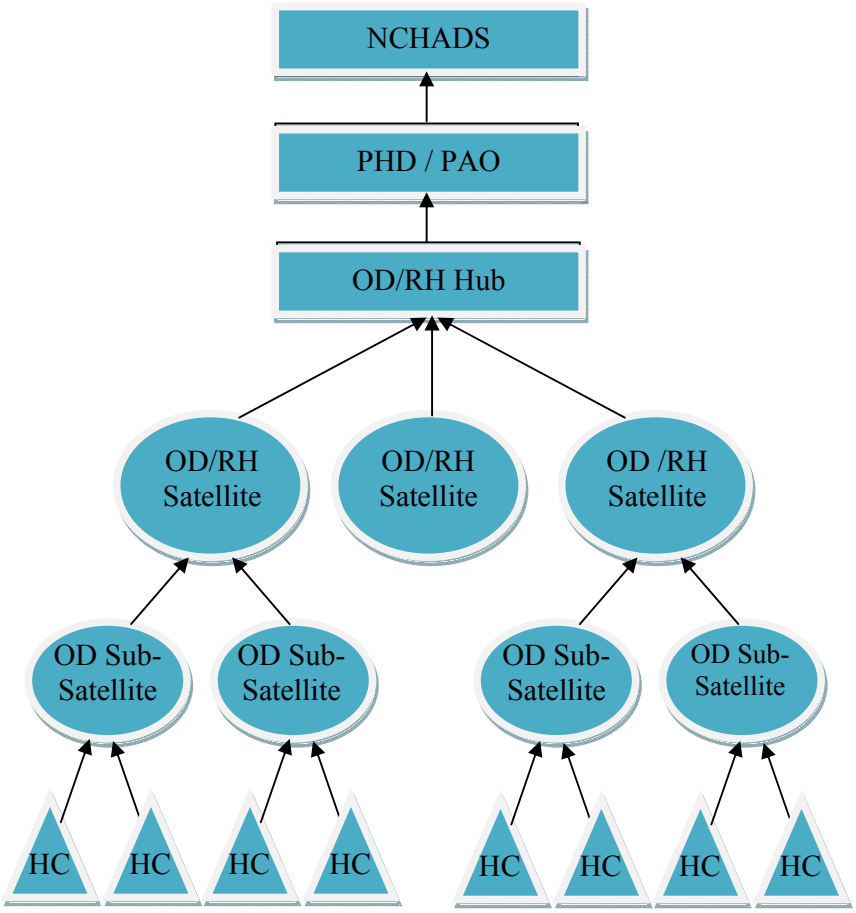
At the national level NCHADS will provide clinical support to all Linked Response sites and providers. Continual quality improvement will be a goal in all aspects of the Linked Response.

NCHADS and PAO will distribute reports to stakeholders and publish them on its website.

At the cluster level, the technical support to network sites will consist of:
Logistics/Supply Management Officer
Data Management Officer

Data Management: HC sub-satellites will report Linked Response activities to OD RH satellites. The OD satellites will report to the OD RH hubs, where the data manager and program management teams are based. Currently, many ODs do not have the capacity for data collection. In the future, we aim to strengthen OD RH satellites so they can take on more responsibility and function more independently from the provincial level. Until capacity is expanded at the OD RH satellite level, OD RH hubs will oversee data management. The Linked Response data manager will collect data reporting forms from all the relevant sources at the OD level in the district before passing it to the program management team and the Provincial Health Department. The cluster-level office will approve and compile the data before passing it on to NCHADS (see diagram below).

Data Flow to Support the Linked Response



Logistics / Supply Management: OD hubs will support OD satellites in the following ways:

OD/RH (Hub):

- Logistics and supply management
- Quality assurance and quality improvement
- Quality control for laboratory support
- Data management

Logistics and supply management should be closely linked to data management and financial management and OD/RH hubs should assess the needs of OD satellites and sub-satellites every three months at the quarterly coordination meetings. This will optimize the use of prophylaxis drugs and avoid OD/RH stock outs. The OD hub should be an RH with existing HIV/AIDS and sexual and reproductive health services and adequate human resources.

Standardized Referral Cards will facilitate Linked Response referrals between services. The cards will refer patients to the following related services: VCCT, STI, ANC (PMTCT), TB (HIV), Family Planning, Maternal and Newborn Health, and OI/ART. They will be distributed by NCHADS in coordination with other relevant centers (e.g. CENAT, NMCHC). The cards will be used to track which services are making appropriate and necessary patient referrals.

8. Model for Linked Response

Hub:

- Patient Services:
  - The chosen RH hub should have large patient capacity and offer "one-stop service" – including complete OI/ART, PAC, ANC/safe delivery, PMTCT, STI services, family planning, adolescent health care, and a laboratory with CD4 testing capacity.
  - The hub needs to work to strengthen the referral system between services within its facility and enhance coordination between its services and the HBC teams/ community support networks in the local area.
- Referrals:
  - The hub should refer HIV-positive pregnant women ineligible for HAART back to the satellite or sub-satellite for ARV prophylaxis, monitoring, and safe delivery.
  - The Hub should refer HIV-positive pregnant women on second line treatment to a national referral hospital in Phnom Penh for care and treatment.
- Program Management / Support to Satellites and Sub-satellites:
  - General technical support
  - Laboratory support
  - Logistics and supply management support
  - Aggregate samples from satellite network for transfer to national reference lab in Phnom Penh
  - Host quarterly meeting for all key players: health facility directors, OD Directors, HBC teams, community support groups, PHD representative, NCHADS representative, NGO partners, and PMTCT coordinator.

Satellite:

- Patient Services:
  - HIV testing and counseling, ANC and safe delivery, infant feeding education, ARV prophylaxis (AZT and NVP for mother and child), DBS sample collection, Cotrimoxazole OI prophylaxis for infants, laboratory services (VCCT, Hemoglobin/Hematocrit).
  - The satellite must work to strengthen the linkages between available services within its facility and to enhance coordination with HBC teams and community support groups in its catchment area.

- Referrals:
  - The satellite will refer HIV-positive patients to the hub for initiation in OI/ART programs and HAART eligibility assessment.
  - The satellite will refer HIV-positive infants to the hub for monitoring and follow-up.
  - The satellite will refer patients to STI services at the hub.
- Program Management / Support to Sub-satellites:
  - The OD will organize a quarterly coordination meeting for all partners - satellites and sub-satellites, HBC teams, and community support groups who work with those facilities. The Provincial Health Department, NCHADS and NMCHC can be called upon for support if necessary.
  - The satellite should aggregate data from the sub-satellites in its OD for submission to hub.
  - The satellite should provide laboratory support for VCCT and hemoglobin/hematocrit testing to the sub-satellite.

Sub-Satellite:

- Patient Services:
  - HIV testing and counseling, ANC/safe delivery, infant feeding education, ARV Prophylaxis (AZT and NVP for mother and child), DBS sample collection, Cotrimoxazole OI prophylaxis for infants.
  - Contract midwives to administer SD-NVP in the HCs where have no ARV prophylaxis.
  - Include VCCT services to pregnant women in the package of ANC and Immunization services that are provided during outreach visits to remote villages.
- Referrals:
  - The sub-satellite should refer HIV-positive patients to the hub for CD4 testing.
  - The sub-satellite should refer HIV-positive pregnant women on AZT-based regiments to the satellite for anemia testing. If woman is unable to travel, the sub-satellite should arrange for the blood sample to be delivered to the satellite lab.
  - The sub-satellite should refer DBS samples from HIV-exposed infants to the hub, to be sent to NIPH.
- Program Management:
  - Submit data to OD satellite for monitoring
  - Participate in quarterly meeting with OD partners
  - Participate in quarterly meeting with hub and all partners in participating ODs, PHD, and NCHADS.

HBC:

- Human Resources:
  - Participating HBC teams should hire an additional female team member to concentrate on the crucial PMTCT component of HIV/AIDS prevention, care and treatment. This person should be trained on VCCT counseling, the National PMTCT protocol and the services available within the Linked Response network.
- Community linkages:
  - The HBC team should work closely with TBAs, midwives, and unofficial medical practitioners in their areas to reach pregnant women and other high-risk communities.
  - The HBC team should work with village chiefs to encourage education about the advantages of PMTCT and sexual and reproductive health care.
  - The HBC team should lead the effort with TBAs, midwives, and commune leadership to help educate citizens on positive prevention and the importance of family planning.
  - The HBC team should coordinate with other HBC teams and community support groups in their local areas to provide full coverage of catchment area and provide good follow-up and monitoring of patients.
  - The HBC team should refer patients to the nearest facility within the Linked Response network (sub-satellite, satellite, hub) for services.
  - The HBC team working with the sub-satellite and HC staff should support the "three option strategy" (see Policy Pilots in Prey Veng section) for the provision of VCCT services to pregnant women through the cooperative development of a plan of support that is tailored to the needs of the catchment area.
- Work Plan / Patient Services:
  - The HBC team should set a target for the number of pregnant women they plan to identify and support in their area.
  - The HBC team should work with their partner health facilities to develop a strategy to support patients in the following ways:
    - HIV-negative:
      - Work closely with counselor to educate clients on HIV/STI prevention and family planning.
      - Refer clients to ANC, family planning or STI services as needed.

- HIV-positive:
    - Work with facility to refer patient to hub for CD4 testing and HAART, if patient is eligible.
    - If patient is not eligible for HAART, work with facility to maintain patient monitoring and initiate anemia testing and AZT prophylaxis for pregnant women.
    - Support HIV-positive mother to reach safe delivery facility and appropriate ARV prophylaxis for mother and child.
    - Support HIV-positive mother to adhere to an exclusive feeding method.
- Exposed infants:
    - Support transport to hub for enrollment in OI/ART if infant is HIV-positive.
    - Support any follow-up care and treatment necessary based on infant status.

- Program Management:
    - The HBC team should participate in quarterly meetings with their OD and with the entire Linked Response network at the hub.
    - The HBC team should fulfill all reporting requirements to Linked Response program.
    - The HBC team should monitor their funding closely to ensure that they have adequate resources to support the target number of patients within their catchment area.

Case Study: Prey Veng Cluster
Four ODs: Neak Loeung, Preah Sedach, Kampong Trabek, Mesang

There are currently 38 Health Centers and three Referral Hospitals in Prey Veng with a total of one PMTCT and five VCCT centers in this zone.

Hub:
Neak Loeung RH

Satellites:
Mesang RH
Preach Sedach RH
Kampong Trabek RH

Sub-satellites:
Neak Loeung OD – Svay Phluos, Cheung Phnom (Ba Phnum)
Mesang OD – Svay Chrun
Kampong Trabek – Prey Poun
Preah Sedach – Kampong Prasat

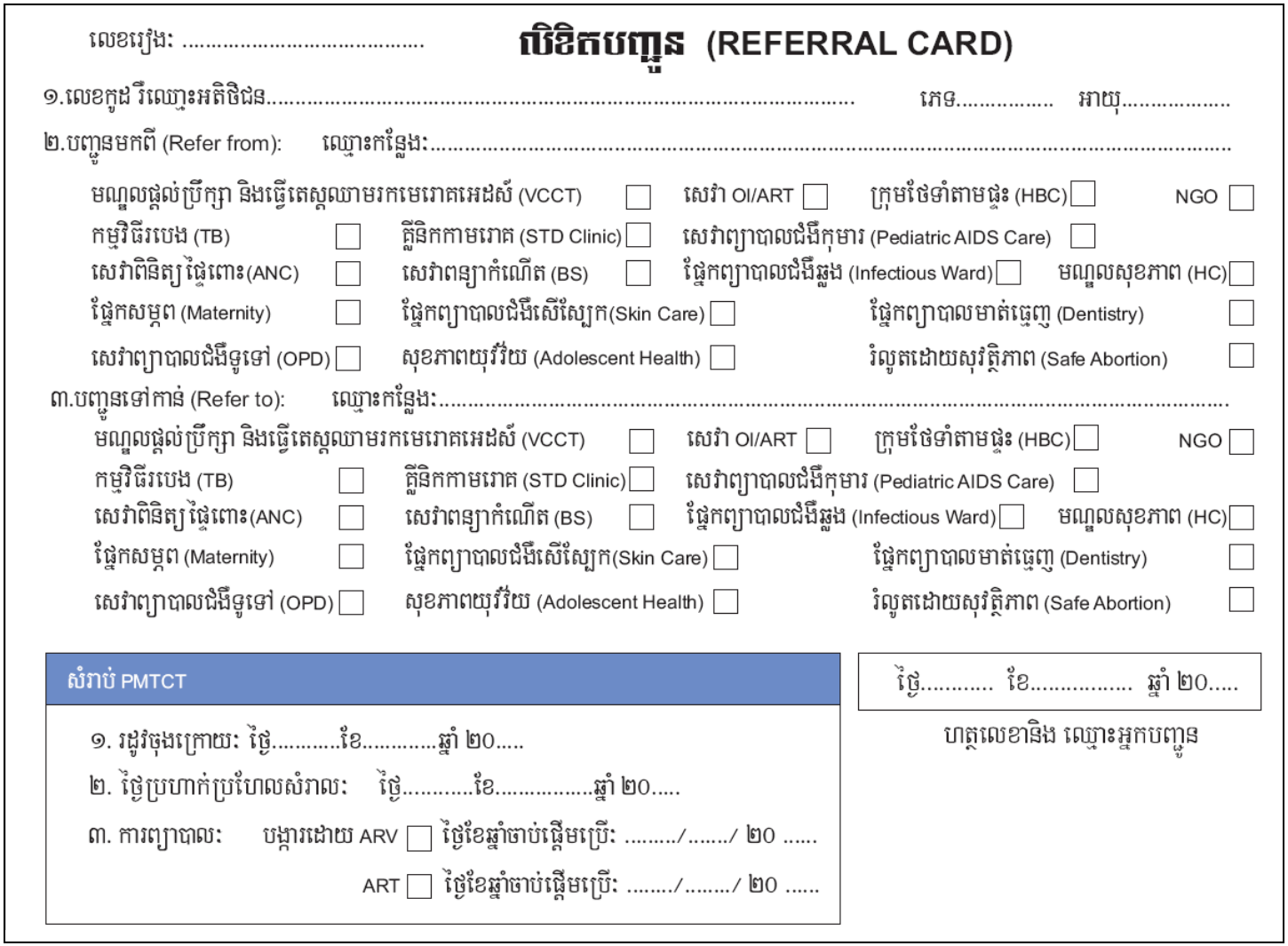
(See map in Annex 2)

Demonstration Project in Prey Veng:

1. **Raising CD4 threshold to initiate HAART for HIV-positive pregnant women.** Women with CD4 counts less than or equal to 350 will be initiated on HAART and will remain on HAART indefinitely, especially through infant feeding period.
2. **Intra-partum testing**. Mothers presenting to maternity wards for delivery with unknown HIV status will be offered an HIV test. Those found positive will receive ARV prophylaxis for themselves and their babies.
3. **Administration of delivery ARV Prophylaxis in the home setting**. Midwives will be trained and contracted to administer ARV prophylaxis outside of health care facilities in emergency situations. Mothers will be strongly encouraged, and enabled through HBC support, to deliver at health care facilities.
4. **Three option strategy to increase access to HIV for the provision of VCCT services to pregnant women**
    1. Pregnant women will be referred to VCCT through HBC teams in their communities. HBC teams support the transport of pregnant women to the VCCT centers.
    2. Pregnant women presenting at HCs that do not have VCCT facilities will have the option to receive pre-test counseling and have blood drawn at the HC. HBC teams will provide logistical support to ensure that blood samples are transported to the appropriate VCCT center for processing in a timely manner. The HBC teams will also facilitate the transport of results from the VCCT lab back to the HC. Negative results will be delivered by HC staff. Positive results will be delivered by a sub-satellite based midwife or female nurse who has been contracted and trained to conduct this type of follow-up service.

3. HC staff will incorporate VCCT outreach in their existing Maternal Child Health immunization program visits to villages in their jurisdiction. HBC teams will provide outreach services to ensure that pregnant women are aware of upcoming outreach visits. Health Center-based staff will draw blood from pregnant women after they receive pre-test counseling which will be included in the village based mother class. Blood will be transported back to the sub-satellite VCCT laboratory for processing. Test results will be delivered in one of two ways. Negative results will be delivered in a post-test counseling session that occurs during the following village outreach visit. Whenever possible, post-test results will be delivered by the same provider who initially drew the pregnant women's blood. Positive results will be delivered by a sub-satellite based midwife or female nurse who has been contracted and trained to conduct this type of follow-up service.

Annex 1: Referral Card



លេខរៀង: .....

លិខិតបញ្ជូន (REFERRAL CARD)

១.លេខកូដ វីឈ្មោះអតិថិជន..... ភេទ..... អាយុ.....

២.បញ្ជូនមកពី (Refer from): ឈ្មោះកន្លែង:.....

មណ្ឌលផ្តល់ប្រឹក្សា និងធ្វើតេស្តឈាមរកមេរោគអេដស៍ (VCCT) ☐ សេវា OI/ART ☐ ក្រុមថែទាំតាមផ្ទះ (HBC) ☐ NGO ☐

កម្មវិធីរបេង (TB) ☐ គ្លីនិកកាមរោគ (STD Clinic) ☐ សេវាព្យាបាលជំងឺកុមារ (Pediatric AIDS Care) ☐

សេវាពិនិត្យផ្ទៃពោះ(ANC) ☐ សេវាពន្យាកំណើត (BS) ☐ ផ្នែកព្យាបាលជំងឺឆ្លង (Infectious Ward) ☐ មណ្ឌលសុខភាព (HC) ☐

ផ្នែកសម្ភព (Maternity) ☐ ផ្នែកព្យាបាលជំងឺសើស្បែក(Skin Care) ☐ ផ្នែកព្យាបាលមាត់ធ្មេញ (Dentistry) ☐

សេវាព្យាបាលជំងឺទូទៅ (OPD) ☐ សុខភាពយុវវ័យ (Adolescent Health) ☐ រំលូតដោយសុវត្ថិភាព (Safe Abortion) ☐

៣.បញ្ជូនទៅកាន់ (Refer to): ឈ្មោះកន្លែង:.....

មណ្ឌលផ្តល់ប្រឹក្សា និងធ្វើតេស្តឈាមរកមេរោគអេដស៍ (VCCT) ☐ សេវា OI/ART ☐ ក្រុមថែទាំតាមផ្ទះ (HBC) ☐ NGO ☐

កម្មវិធីរបេង (TB) ☐ គ្លីនិកកាមរោគ (STD Clinic) ☐ សេវាព្យាបាលជំងឺកុមារ (Pediatric AIDS Care) ☐

សេវាពិនិត្យផ្ទៃពោះ(ANC) ☐ សេវាពន្យាកំណើត (BS) ☐ ផ្នែកព្យាបាលជំងឺឆ្លង (Infectious Ward) ☐ មណ្ឌលសុខភាព (HC) ☐

ផ្នែកសម្ភព (Maternity) ☐ ផ្នែកព្យាបាលជំងឺសើស្បែក(Skin Care) ☐ ផ្នែកព្យាបាលមាត់ធ្មេញ (Dentistry) ☐

សេវាព្យាបាលជំងឺទូទៅ (OPD) ☐ សុខភាពយុវវ័យ (Adolescent Health) ☐ រំលូតដោយសុវត្ថិភាព (Safe Abortion) ☐

សំរាប់ PMTCT

១. រដូវចុងក្រោយ: ថ្ងៃ.....ខែ.....ឆ្នាំ ២0.....

២. ថ្ងៃប្រហាក់ប្រហែលសំរាល: ថ្ងៃ.....ខែ.....ឆ្នាំ ២0.....

៣. ការព្យាបាល: បង្ការដោយ ARV ☐ ថ្ងៃខែឆ្នាំចាប់ផ្តើមប្រើ: ...../...../ ២0 .....

ART ☐ ថ្ងៃខែឆ្នាំចាប់ផ្តើមប្រើ: ...../...../ ២0 .....

ថ្ងៃ..... ខែ..... ឆ្នាំ ២0.....

ហត្ថលេខានិង ឈ្មោះអ្នកបញ្ជូន

Annex 2: Follow-up Card

PMTCT FOLLOW-UP SHEET for HBC

I- PRE-NATAL FOLLOW-UP

Name or ID (PMTCT, OI/ART): ……..Name of RH/clinic: ……..……..Date enrolled: ……..……

Marital status: ……# of children: ……... (#of HIV tested: …… # of HIV+: ……..)Expected week of delivery: ……..……

CD4 test: ☐ No☐ Yes. If yes, test 1: date……and result……, test 2: date……and……result……..

On HART:☐ No☐ Yes. If yes, date of initiating ……On ARV prophylaxis: ☐ No☐ Yes. If yes, date of initiating……..

Service Received		Baseline	Pregnancy age										
			Week 2	Week 4	Week 8	Week 12	Week 16	Week 20	Week 24	Week 28	Week 34	Week 34	Week 36
Hemoglobin test	Date												
	Result												
Hematocrit test	Date												
	Result												
ARV prophylaxis	Yes												
	No												
Infant feeding counseling	Date												
	Provider												
Infant feeding intention													
Delivery intention	☐ Home ☐ Facility (Name of the facility :……..)												

II- INTRA PARTUM AND POST NATAL FOLLOW-UP

Delivery date: ……..…… Location: ……..…..…… Attended by: ……

MOTHER on HAART			
Mother	Mother maintains HAART regimen through delivery?	Yes	No
Infant	Mother on HAART <4 weeks before delivery: Infant completed four-week AZT regimen?	Yes	No
	Mother on HAART >4 weeks before delivery: Infant completed one-week AZT regimen?	Yes	No
MOTHER on 28-week AZT PROPHYLAXIS			
Mother	Mother received AZT and NVP prophylaxis?	Yes	No
	Mother completed one-week AZT+3TC tail?	Yes	No
Infant	Infant received NVP prophylaxis during delivery?	Yes	No
	If no, did infant receive NVP prophylaxis within 72 hours?	Yes	No
	Mother on AZT <4 weeks before delivery: Infant completed four-week AZT regimen?	Yes	No
	Mother on AZT >4 weeks before delivery: Infant completed one-week AZT regimen?	Yes	No
HIV+ MOTHER PRESENTED W/UNKNOWN STATUS			
Mother	Mother received NVP during delivery?	Yes	No
	Mother completed one-week AZT+3TC tail?	Yes	No
Infant	Infant received NVP during delivery?	Yes	No
	If no, did infant receive NVP prophylaxis within 72 hours?	Yes	No
	Infant completed four-week AZT regimen?	Yes	No

Mother received infant feeding counseling after delivery: ☐ Yes ☐ NoInfant feeding method initiated? ☐ BF ☐ FF

Mother referred to _____ for follow-up.Infant referred to _____ for follow-up.

III- INFANT FOLLOW UP

Name or ID of Infant: ……Date of Birth: …….. Name of Follow up Facility: …….

INFANT FEEDING METHOD

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
EBF						
EFF						
MF						
Weaned off breastfeeding at 6 months? Yes No If no, when?						

INFANT DIAGNOSIS, CARE & TREATMENT

6 weeks	DBS sample taken	DNA PCR results received	Status	Initiated on Cotrim?	CD4% test	CD4% Results received	Initiated on HAART?
Yes/No							
Date							
7.5 months	Infant weaned?	DBS sample taken	DNA PCR results received	Status	CD4% test?	CD4% Results received	Initiated on HAART?
Yes/No							
Date							
12/18 months	HIV Antibody test	HIV Antibody results	Confirmed Status	CD4% test?	CD4% Results received	Initiated on HAART?	
Yes/No							
Date							

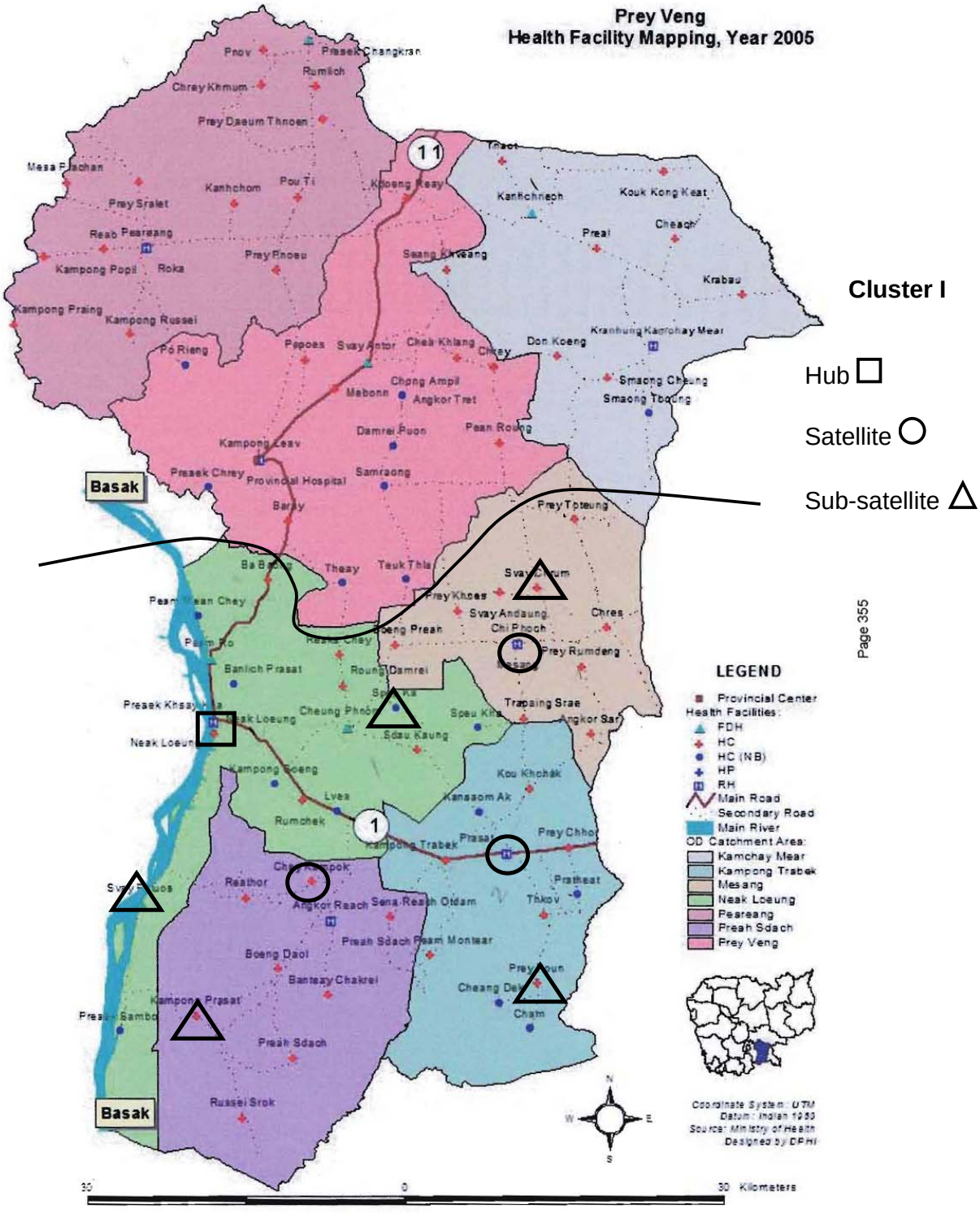
INFANT IMMUNIZATIONS

	Birth	**6 weeks**	**10 weeks**	**14 weeks**	**9 months**
	BCG, HBV1	OPV1, DTP1, HBV2	OPV2, DTP2, HBV3	OPV3, DTP3, HBV4	Measles
Yes/No					
Date					
Where?					

COUNSELING FOR MOTHER

	1 session	**2 sessions**	**3 sessions**	**4 sessions**
Family Planning				
Nutrition/Infant feeding				

Annex 3: Map of Health Facilities in Prey Veng, 2005



Annex 4: Prey Veng PMTCT Targets

Year 1: (assumes 70% of pregnant women accept HIV testing)
Provide complete course of ARV prophylaxis for 60% of HIV-positive pregnant women and exposed infants.

Year 2: (assumes increase in % of pregnant women accepting HIV testing)
Provide complete course of ARV prophylaxis for 70% of HIV-positive pregnant women and exposed infants.

Year 3: (assumes increase in % of pregnant women accepting HIV testing)
Provide complete course of ARV prophylaxis for 80% of HIV-positive pregnant women and exposed infants

Annex 5: Linked Response Monitoring Indicators

1. Number of OD with at least one center that provides public PMTCT services.

2. Number and percentage of pregnant women who were tested for HIV and received their test result

3. Number and percentage of women who test positive for HIV

4. Number and percentage of HIV-infected pregnant women in Linked Response ODs who received a complete course of ARV

5. Number and percentage of HIV-exposed infants in PMTCT Program ODs who receive a complete course of ARV prophylaxis, according to Cambodia national guidelines

6. Number and percentage of HIV-exposed infants in PMTCT Program ODs who are initiated on cotrimoxazole prophylaxis

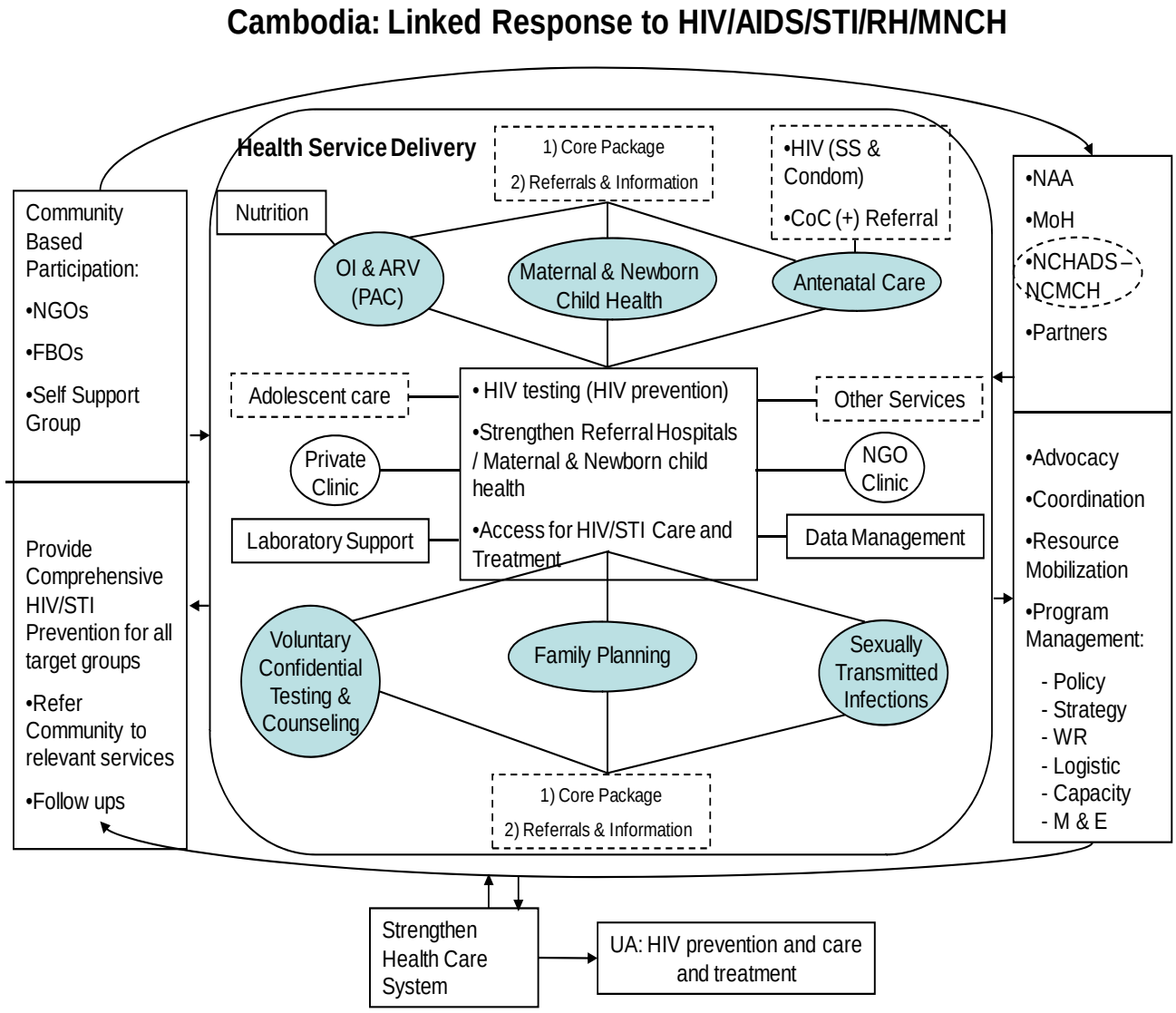
7. Total number of women and their infants in LR program ODs supported by HBC teams

8. Number and percentage of HIV-exposed infants testing negative for HIV by DNA PCR six weeks post-weaning

9. Number and percentage of HIV-exposed infants in LR program ODs lost to follow-up before 18 months of age.

10. Number and percentage of HIV-infected infants born to HIV-infected mothers in Linked Response ODs (Diagnosis of HIV infection is determined DNAPCR testing <18 months and antibody testing ≥ 18 months as established in the National Guideline for the Use of Pediatric Antiretroviral Therapy in Cambodia, November 2007)

Annex 6: Linked Response Diagram



Annex 7: Linked Response PMTCT