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PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV: AN RCH-HIV INTEGRATION MODEL FOR UTTAR PRADESH

SEPTEMBER 2010

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The views expressed in this publication do not necessarily reflect the views of the U.S. Agency for International Development or the U.S. Government.

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EXECUTIVE SUMMARY

India's National AIDS Control Organization and its Ministry of Health and Family Welfare developed an HIV and Reproductive and Child Health Convergence Strategy in recognition of the risk of mother-to-child transmission and, more important, the potential to reduce HIV transmission. Uttar Pradesh, a state with a high number of annual pregnancies and high vulnerability to HIV, is taking steps to integrate HIV and reproductive child health (RCH) services. This document provides a framework, including key strategies and expected outcomes, for the RCH-HIV integration model for Uttar Pradesh.

The overall goal of RCH-HIV integration is to prevent HIV transmission from mother to child within Uttar Pradesh by (1) ensuring universal coverage of all pregnant women through HIV counseling and testing, (2) ensuring institutional deliveries for HIV-positive pregnant women, and (3) monitoring HIV infection in children up to age 18 months.

The key strategies for achieving the desired outcomes include the following:

- Set up effective collaboration and coordination between the Department of Health and Family Welfare (DoHFW) and the Uttar Pradesh State AIDS Control Society (UPSACS) to work toward the common goal of improving the well-being of mother and child by preventing vertical transmission of HIV.
- Identify public and private service delivery models to ensure that all HIV-positive women have institutional deliveries—with the option of Caesarean section—and receive needed drugs and counseling. Scale up public-private partnership models to expand the base of healthcare providers in the state to respond to the need for increased institutional deliveries.
- Optimally use existing resources and schemes under the National Rural Health Mission (NRHM) and UPSACS to expand testing, counseling, institutional delivery, and timely provision of antiretroviral prophylaxis as well as family planning advice to all HIV-positive pregnant women.
- Engage related departments that can enhance the quality of services delivered to pregnant women.
- Institutionalize robust monitoring systems that are integrated into existing systems (to the extent possible) to ensure timely provision of high-quality services and adequate documentation to demonstrate results.

Full operationalization of the RCH-HIV integration model requires the NRHM and/or DoHFW to undertake the following broad steps:

- Formal approval and adoption of the integration task force's recommendations by the Principal Secretary of Health and Family Welfare, Government of Uttar Pradesh.
- Dialogue with key collaborators to build consensus.
- Issuance of a circular or departmental order formally announcing roll-out of the integration model.
- Preparation and dissemination of reporting formats and operational guidelines to ensure consistent, standard, and uniform messaging down to the level of the last service provider in the state healthcare delivery system.

ABBREVIATIONS

AFASS	available, feasible, affordable, sustainable, and safe options for infant feeding in the context of HIV
AIDS	acquired immune deficiency syndrome
ANC	antenatal care
ANM	auxiliary nurse midwives
ART	antiretroviral therapy
ARV	antiretroviral
ASHA	accredited social health activist
AWW	Anganwadi worker
BCC	behavior change communication
CD4	cluster of differentiation 4
CHC	community health center
CMO	chief medical officer
CPT	co-trimoxazole prophylactic therapy
DAPCU	District AIDS Prevention and Control Unit
DBS	dry blood spot testing
DLHS	District-level Household and Facility Survey
DTO	District Technical Officer
DoHFW	Department of Health and Family Welfare
EFF	exclusive formula feeding
FSW	female sex worker
HIV	human immunodeficiency virus
ICTC	integrated counseling and testing center
IDU	injecting drug user
IEC	information, education, and communication
JSY	Janani Suraksha Yojana
MOPHC	Medical Officers Primary Health Center
MOIC	medical officers in charge
MSM	men who have sex with men
NGO	nongovernmental organization
NRHM	National Rural Health Mission
PHC	primary health center
PLHIV	people living with HIV
PMU	Project Management Unit
PNC	post-natal care
PEP	post-exposure prophylaxis
PPTCT	prevention of parent-to-child transmission
RCH	reproductive child health
SRS	Sample Registration System
STD	sexually transmitted disease
STI	sexually transmitted infection
TB	tuberculosis
UP	Uttar Pradesh
UPSACS	Uttar Pradesh State AIDS Control Society
VHND	Village Health and Nutrition Day

I. INTRODUCTION

Vertical transmission of HIV from an HIV-positive mother to her baby can occur at three stages: during pregnancy, during child birth, and through breastfeeding. Currently, mother-to-child transmission accounts for nearly 4.3 percent of all HIV infections in India. Absent interventions, the risk of transmission from mother to child is approximately 20 to 45 percent. If mother and child receive a standard and timely package of services, including antiretroviral (ARV) prophylaxis (Nevrapine), institutional deliveries (including Caesarean section as needed), and informed decisionmaking regarding breastfeeding per AFASS (available, feasible, affordable, sustainable, and safe options for infant feeding in the context of HIV) criteria,¹ the risk of transmission decreases to less than 2 percent.

Once the National AIDS Control Organization and Ministry of Health and Family Welfare recognized the risk of mother-to-child transmission and, more important, the potential to reduce transmission, they developed an HIV and Reproductive and Child Health Convergence Strategy. The strategy outlines steps for integration of HIV prevention and care interventions with the health sector's infrastructure, human resources, and outreach to all villages and communities.

Karnataka was one of the first states in India to roll out the integration model, with a focus on preventing parent-to-child transmission. At the end of two years, the model produced measurable gains in both reproductive and child health (RCH) and HIV program indicators and an anecdotal reduction in harassment and burden on end-users. As other states began to implement integration models, it became clear that each state must modify the proposed national strategies in accordance with its own disease burden, fertility rates, available infrastructure, and human resources. Even though strategies may differ across states, it is uniformly evident that high-level policy commitment is non-negotiable if integration is to work.

Uttar Pradesh accounts for approximately 660,000 annual pregnancies—of which an estimated 12,304 are HIV positive (0.18 percent² prevalence in antenatal clinics). Uttar Pradesh (UP) has identified the opportunity to prevent vertical transmission through modest shifts in its existing strategies. By piggybacking HIV services with its robust RCH program, the Uttar Pradesh State AIDS Control Society (UPSACS) has instant access to needed infrastructure, human resources, and, more important, sexually active and pregnant women. The state has therefore taken the first crucial step toward integration by issuing an office order to convene a multisectoral task force to design an effective model for integration, specifically adapted to Uttar Pradesh.

This document provides a framework for the RCH-HIV integration model for prevention of parent-to-child transmission that has evolved through the work of an integration task force. The task force, supported by the USAID | Health Policy Initiative, Task Order 1, analyzed various working models, including the home-grown model implemented by Karnataka, and carefully scrutinized the situation in Uttar Pradesh. Using an Appreciate Enquiry approach, the task force proposed a model that builds on current opportunities while recognizing the gaps and challenges in the state's existing health systems.

II. CONTEXT

Uttar Pradesh is India's most populous state. With a population of 166 million, it accounts for 16.4 percent of India's total population. Geographically, it is the fourth-largest state in the country,³ covering 9

¹ See Annex A for the AFASS criteria.

² Annual Action Plan 2010–2011, UPSACS.

³ In terms of geographic area, Rajasthan is the largest state in India, followed by Madhya Pradesh, Maharashtra, Andhra Pradesh, and Uttar Pradesh.

percent of the landmass. It shares an international border with Nepal and domestic borders with Uttaranchal, Himachal Pradesh, Haryana, Delhi, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, and Bihar.

Uttar Pradesh is divided into 18 revenue divisions and 71 districts. For planning and development purposes, the state encompasses four regions based on homogeneity, contiguity, and economic criteria: Western, Central, Eastern, and Bundelkhand. For the HIV/AIDS program, the districts are grouped differently: 7 districts in Bundelkhand region, 24 in Central region, 19 in Eastern region, and 21 in Western region.

Approximately one-quarter of Uttar Pradesh households are located in urban areas. With nearly 75 percent of its households residing in rural areas, UP has India's largest rural population (131.6 million).⁴ Owing to particularly high fertility rates, a little less than half (42 percent) of the population is below age 15. The high percentage of the population under age 15, the low median age at marriage among women (16.2 years) and men (20.1 years), and low literacy rates point to the need for both RCH and HIV services targeted to youth. The population density is extremely high in the Eastern and Western regions and much lower in Bundelkhand. The factors for high population density, however, differ dramatically for the two regions; the Eastern region has a very high fertility rate, whereas the industrialized Western region is home to a large number of inter- and intrastate migrants.

Only 69 percent of children age 6 through 17 attend school in Uttar Pradesh. Significantly, 54 percent of women and 21 percent of men age 15 through 49 have never attended school in the state.⁵ A mere 18 percent of women have completed 10 or more years of education.

The State of Health

UP's achievement on major health indicators is ranked among the lowest in India (see Tables 1 and 2). In the last five years, only one-quarter of pregnant women made three or more antenatal care (ANC) visits for their last birth, and nearly three of four deliveries took place at home. The interplay among the large unmet need for family planning (33.8%),⁶ relatively low literacy levels, high levels of rural poverty, and gender disparities results in poor maternal health and extraordinarily high maternal mortality ratios, infant mortality rates, and fertility rates.

Table 1. Key Health Indicators⁷

Indicator	Uttar Pradesh	India
Crude Birth Rate SRS 2007	29.5	23.1
Crude Death Rate SRS 2007	8.5	7.4
Total Fertility Rate SRS 2007	3.9	2.7
Infant Mortality Rate SRS 2007	69	55
Maternal Mortality Ratio SRS 2007	440	254
Female Literacy Rate (Census 2001) (percent)	42.2	53.7

SRS = Sample Registration System.

⁴ Census of India, 2001.

⁵ Uttar Pradesh National Family Health Survey 3 Report, p. 4.

⁶ District-level Household and Facility Survey 3.

⁷ Annual Action Plan 2010–2011, UPSACS.

Table 2. Family Planning Indicators⁸

Index	Uttar Pradesh	India
Contraceptive Prevalence Rate (DLHS-3)		
Any Method	38.4	56.3
Any Modern Method	26.7	48.5
- Female sterilization	16.5	37.3
- Male sterilization	0.2	1.0
- Intrauterine device	1.0	1.8
- Pill	1.7	3.1
- Condom	7.1	5.3
Unmet Need for Family Planning (DLHS-3)	33.8	13.2
For Spacing	11.6	6.3
For Limiting	22.2	6.8
Total Fertility Rate (SRS 2007)	3.82	2.68

DLHS = District-level Household and Facility Survey.

While UP lags behind in all national indicators and most states, its RCH situation has seen a significant improvement with the introduction of Janani Suraksha Yojana (JSY). JSY is a cash-benefit scheme under RCH-II that promotes institutional deliveries for below-poverty-line and scheduled caste/scheduled tribe pregnant women. Since the introduction of JSY three years ago, the number of institutional deliveries has increased greatly. Compared with the baseline, the number of beneficiaries has increased almost 10-fold.⁹ To achieve these results, the government has recruited and trained more than 1.35 lakh accredited social health activists (ASHAs) in the five-module RCH curriculum.¹⁰ Even so, UP still has much to accomplish.

UP's expenditure per capital on health is only Rs. 18.46 per year. Though the government's health infrastructure is fairly extensive, it does not meet the needs of the population, it exceeds distance norms, and it does not comply with quality-of-care standards. Clients often travel significant distances only to find that a clinic is unable to provide basic services due to lack of staff, equipment, and medicine. At the community level, health-seeking behavior is generally poor; approximately 80 percent of women deliver at home, and immunization levels are low.

The 40 percent of UP's population living below the poverty line often faces difficulty accessing healthcare. Large numbers of people lack the resources to avail themselves of basic, affordable, high-quality healthcare from the private sector, while the public sector is unable to cope with the patient load associated with the aforementioned problems. Further compounding access issues is the large number of unqualified health practitioners (quacks) in rural and urban areas of the state who take advantage of the unsuspecting poor.

Health Infrastructure

Uttar Pradesh has five super specialty institutes and 18 medical colleges, along with 61 district male hospitals, 53 district female hospitals, and 20 combined hospitals. Out of 438 functional community

⁸ Ibid.

⁹ UP National Rural Health Mission State Action Plan 2010–2011.

¹⁰ Ibid.

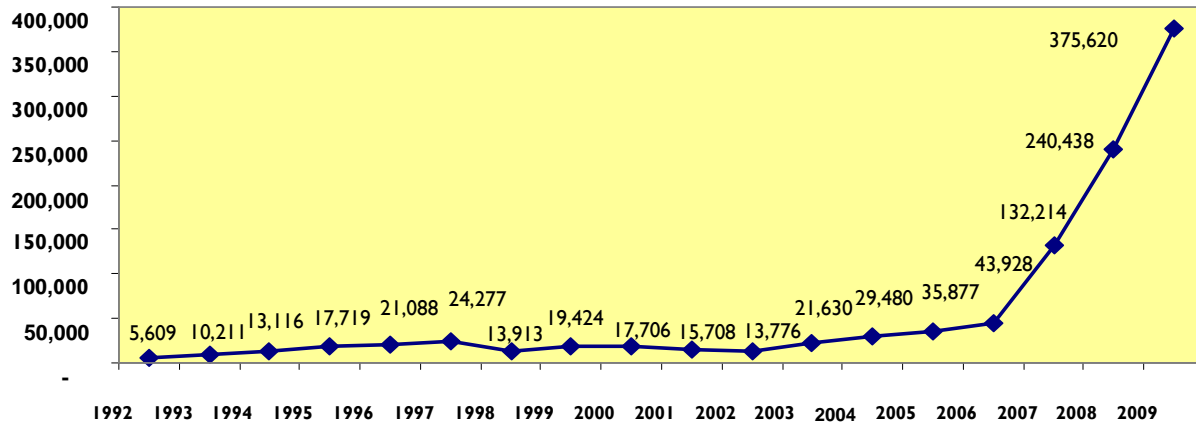
health centers (CHCs), 413 operate as 24x7 units. In addition, UP has 470 functional block primary health centers, 2,680 functional primary health centers (PHCs), and 20,621 sub-centers. UP's ratio of doctors per 1,000 population is much below the national figure of 1 per 1,000 and, although the ratio of beds is almost the same as the all-India figure of 0.7, the beds' geographic distribution is highly skewed in favor of urban areas. The required number of health facilities and human resources is not yet a reality.

HIV/AIDS in Uttar Pradesh: Epidemic and Response

Uttar Pradesh is situated in the central part of north India. It has a low HIV prevalence but is highly vulnerable, with 5 out of 71 districts in the "A" category, 63 in the "C" category, and 3 in the "D" category (Auraiya, Hathras, and the newly created Kanshi Ram Nagar).¹¹ Data show that the adult HIV prevalence in UP is 0.09 percent (2007) with a sero-positivity of 0.81 percent in most-at-risk groups [data collected from clinics treating sexually transmitted diseases (STDs)]. Prevalence among the ANC population, according to the annual sentinel surveillance of 2008, is estimated at 0.18 percent. A recently conducted mapping exercise of most-at-risk groups shows that UP has approximately 22,414 female sex workers (FSWs), 10,922 men who have sex with men (MSM), and 13,946 injecting drug users (IDUs) across its 71 districts. Whereas HIV prevalence among the most-at-risk groups and those people with sexually transmitted infections (STIs) has seen some decline, ANC prevalence has remained stable.

A review of testing data since 1992 shows a rapid increase in voluntary counseling and testing uptake in the last two to three years, with more than 375,620 tests performed in 2009 (see Figure 1). The data also show that sero-positivity peaked and began a downward trend during the 2007–2009 period.

Figure 1: Persons Tested per Year in Integrated Counseling and Testing Centers (ICTC)



In spite of relatively high numbers of people testing positive in integrated counseling and testing center (ICTC) sites in many eastern districts, the number of women testing positive and receiving prevention of

¹¹ All districts in India are classified into four categories based on HIV prevalence in the districts among different population groups for three consecutive years. The categories are defined as follows:

Category A: More than 1 percent ANC prevalence in district in any of the sites in the last three years.

Category B: Less than 1 percent ANC prevalence in all the sites during last three years with more than 5 percent prevalence in any most-at-risk group site (STD/FSW/MSM/IDU).

Category C: Less than 1 percent ANC prevalence in all sites during last three years with less than 5 percent in all most-at-risk group sites with known hot spots (migrants, truckers, large aggregation of factory workers, tourists, and so forth).

Category D: Less than 1 percent ANC prevalence in all sites during last three years with less than 5 percent in all most-at-risk group sites with no known hot spots **OR** no or poor HIV data.

parent-to-child transmission (PPTCT) services is low. The most likely reasons are the low levels of institutional deliveries and the urban location of most testing centers, even though rural areas account for a large percentage of pregnancies and deliveries.

The estimated 32,760 registered cases of people living with HIV (PLHIV) (of all ages) in the state include 13,018 PLHIV (of all ages) on antiretroviral therapy (ART). HIV incidence showed a decrease in most-at-risk groups from 2.21 percent (1998) to 0.81 percent (2007) but no significant change in incidence among the general population.

Key factors of vulnerability in the state relate to low levels of literacy (57.2 % male and 36.6% female in rural areas); high levels of poverty, particularly among women; a large number of most-at-risk population groups; a large population base (200 million) of which nearly 48 to 50 percent are of reproductive age. Migration and mobility also contribute to vulnerability in UP. Of all interstate migrants in India, 23 percent come from Uttar Pradesh. Of those leaving the state, 50 percent travel to Delhi and Maharashtra—the latter one of India’s high HIV prevalence states. Most male as opposed to female migrants depart for economic reasons and return to their families during harvest or festivals. In addition, there is considerable intrastate migration. Further, the open border with Nepal facilitates easy movement of men and women between the two countries.

UP has a dynamic and fast-growing trucking industry supported by the state’s network of well-connected roads. The state has the largest road network in the country, after Maharashtra.¹² UPSACS has identified 21 districts that are highly vulnerable and therefore priority districts for resource allocation and information, education, and communication (IEC) campaigns. For 2010–2011, UPSACS will focus on the 21 districts listed in Annex B.

The state has designed its response to HIV and AIDS within the overall framework of the National AIDS Control Program III. At present, UPSACS is implementing 83 targeted interventions through local partner nongovernmental organizations (NGOs) that are able to reach out to approximately 19,300 FSWs, 8,925 MSM, and 9,350 IDUs, providing needed services and information. The core components of the interventions include behavior change communication, creation of an enabling environment, provision of STI services, and condom promotion. The state provides a similar package of services to the bridge populations of migrants and truckers through the engagement of NGOs.

In accordance with the concept of integrating all HIV-related services into one facility, voluntary counseling and treatment centers and PPTCT centers were remodeled as ICTCs. ICTCs provide entry points for both men and women requiring different services. For instance, pregnant women are referred to PPTCT centers, those with STI symptoms to STD clinics, and those with tuberculosis (TB) symptoms to Revised National Tuberculosis Program centers. Simultaneously HIV-positive persons are referred and linked to ART centers and networks of positive persons. PPTCT centers provide additional services in the form of counseling and testing pregnant women attending ANC clinics. These centers now provide counseling and testing services to all persons seeking services. All clients who access services from ICTCs also receive advice on prevention.

¹² Industry Monitor: Uttar Pradesh. Confederation of Indian Industries, Lucknow, March 2007.

At the start of 2009–2010, the state operated 217 ICTCs, including 79 PPTCT centers (69 district female hospitals and 10 medical colleges). In addition, 17 ICTCs are facility-integrated with 24/7 PHCs. Thirty ICTCs are part of public-private partnerships. The rest of the public health system does not provide integrated HIV and PPTCT services. UP has proposed to increase the number of ICTCs in rural areas, especially in the Eastern region, which is characterized by high outmigration. The state also expects more women to seek institutional deliveries, leading to increased testing of pregnant women from rural areas in response to JSY. Facility-integrated services will be limited to those PHCs with the required staff.

A core component of the HIV/AIDS response is the treatment of STIs. At present, UP accounts for 10 STD clinics in medical colleges and 76 STD clinics in district hospitals. With only six to seven STD patients treated per day at these centers, utilization has been suboptimal, suggesting that most of the vulnerable population accesses STD care from private service providers.

With blood and blood products the most potent source of HIV transmission, UP ensures the availability of a clean blood supply through a network of 165 licensed blood banks in the state. Of these, 66 are National AIDS Control Organization-supported blood banks (64 government banks), 8 are located in military hospitals, and the remaining 91 are charitable and/or private blood banks. Recognizing that blood transfusion services play a vital role in the healthcare delivery system, the state plans to set up at least one blood bank or blood storage center in each district to make safe blood and blood products available to all who need them.

Care, support, and treatment services in the state extend to the management of opportunistic infections, including control of TB in PLHIV, ART, safety measures, positive prevention, and impact mitigation.

By the end of 2009–2010, UP counted 11 ART centers and 41 Link-ART centers. Of these, two ART centers are located in category “A” districts (Allahabad and Etawah). The remaining three category “A” districts have Link-ART centers. With the exception of NTPC Hospital, Unchahar, Raribareli, all ART centers in the state are located in the medical colleges; in fact, all 10 medical colleges in UP are equipped with the centers. From January to December 2009, 9,418 persons registered with centers for a total of 26,028 AIDS cases registered for HIV care. With the addition of 5,606 new persons, enrollment for ART cumulatively totaled 16,166. Finally, with the addition of 3,462 persons between January and December 2009, persons alive and on ART cumulatively reached 10,525. During 2008 and 2009, UPSACS and partners (Population Foundation of India and Uttar Pradesh Network of Positive People) made intensive efforts to trace those lost to follow-up.

At present, UP’s nine community care centers are being funded and managed by the Hindustan Latex Family Planning Promotion Trust and Population Foundation of India under the Global Fund to Fight AIDS, Tuberculosis and Malaria Project, Round 6; and three more additional centers are proposed to cover all ART centers in the state. Each community care center is expected to have a client load of 1,000 PLHIV.

Higher Vulnerability to HIV Transmission in Eastern Districts of Uttar Pradesh

A district aggregation of data from blood banks, ART centers, and ICTCs indicates the presence of a serious epidemic in the Eastern region. This region has witnessed nearly four times the number of AIDS-related deaths, compared with the Western and Central regions. The epidemic in Eastern UP must be viewed in the context of the factors that heighten the risk of transmission and pose challenges to prevention. For example, the Eastern region has the highest out migration rates, highest fertility rates, and lowest educational status, particularly among women. It has the lowest per capita income and slow industrial growth. It also has a large number of small villages (<200 population), which negatively impacts service provision. These factors interact to increase vulnerability. Of the 21 districts identified as vulnerable by UPSACS, 11 are from the Eastern region.

III. RATIONALE FOR INTEGRATION

Mother-to-child transmission accounts for more than 10 percent of all new HIV infections globally. All HIV-positive pregnant women may transmit the virus to their babies during pregnancy, during childbirth, or after birth through breastfeeding. The risk of transmission can be significantly reduced from 20 to 45 percent to less than 2 percent with timely interventions that include a package of services consisting of ARV prophylaxis and treatment, delivery by Caesarean section, and counseling on breastfeeding.

The argument for HIV/AIDS and RCH service integration in India is based on the following:

- The framework of the NRHM emphasizes convergence of services as a core principle.
- There are clear overlaps between the RCH program and the PPTCT program's 4-pronged approach
- A key objective of NRHM is reduction in maternal and child mortality. Therefore, provision of services to pregnant women, irrespective of their HIV status, is the primary responsibility of the RCH program, which is a component of the NRHM.

The four critical components or “prongs” of the PPTCT program include the following:

- Primary prevention of HIV, especially among pregnant women and young people
- Prevention of unintended pregnancies among HIV-positive women
- Prevention of HIV transmission from HIV-positive women to their children
- Treatment, care, and support of HIV-positive women and their families

A pregnant woman, irrespective of her HIV status, comes under the purview of the state Reproductive Health Program. The Government of India's guidelines also stipulate that all pregnant women must be encouraged to get tested for HIV so that timely action may be taken to prevent transmission from mother to baby and enable the mother to enroll in the government's ART program.

The situation in Uttar Pradesh further strengthens the case for integration on the following basis:

- The average number of HIV-positive pregnant women per district and their ratio to the number of ASHAs or auxiliary nurse midwives (ANMs) is very small. A review of other states' integration experience shows that 100 percent coverage of HIV-positive pregnant women is not likely to increase the workload of ASHAs, ANMs, or other RCH workers. However, integration does contribute to an increased uptake of testing and ANC services. With an estimated 12,304 HIV-positive pregnant women per year in UP, 100 percent coverage equals approximately 183 women per district per year.
- Several innovative activities are scheduled for launch or scale-up under the latest National Rural Health Mission (NRHM) Program Implementation Plan (2010–2011), which provides opportunities for integration of HIV with little additional effort or cost. These include the following:
 - A name-based mother and child tracking system to ensure that all pregnant women receive ANC and post-natal care (PNC) and that children receive immunizations
 - Scale-up of an Interactive Voice Recording System
 - Micro birth plans developed by the ASHA with the support of ANMs
 - Family welfare counselors placed in district hospitals
 - Strengthened Village Health and Nutrition Day (VHND) activities to provide all pregnant and lactating women with counseling, referrals, and nutrition support

- A key objective of the Uttar Pradesh HIV prevention program is to reduce new infections by 40 percent (per the national guidelines for vulnerable states). Prevention of mother-to-child infection fits within this objective. Some of the proposed initiatives offer opportunities for integration, such as
 - Setting up facility-integrated ICTCs that merge seamlessly with the NRHM; and
 - Piloting whole-blood finger-prick HIV testing, which is important for last-minute walk-in delivery cases.
- The congruent timing of finalization of the UPSACS HIV/AIDS Annual Action Plan and the NRHM Program Implementation Plan makes it possible to formalize policy commitments to integration.

The numbers to be covered are small, but a little effort will have a large impact. With a birth rate of 30 per 1,000 population, UP's estimated pregnancies would total approximately 0.6 million. As per the DLHS-3, the proportion of institutional deliveries in UP is 24.5 percent or 458,015 births. UP plans to reach 60 percent of institutional deliveries in A and B districts and 25 percent in C and D districts.

UP estimates that fiscal year 2010–2011 will account for approximately 12,300 HIV-positive pregnant women. UPSACS plans to reach out to 25 percent of these women (approximately 3,076) who will likely seek institutional deliveries. The state has set the target for detecting HIV during ANC visits at 914 and hence the target for mother-baby pair coverage at 914.

Creating a Task Force: A First Step to Integration

On December 29, 2009, the Department of Health and Family Welfare proposed (vide letter dated 29/12/2009) the formation of a task force with the following objectives:

- Review existing models and summarize and enlist key lessons
- Analyze the HIV and RCH situation and response in UP and accordingly propose a model appropriately suited to the UP context
- Prepare operational guidelines, templates, and a micro plan for implementation

Each center will closely monitor reporting to identify discrepancies between/among pregnant mothers identified as HIV positive during ANC, the number followed up, the number who delivered, and the number who received Nevrapine. The discrepancies will be a key monitoring component for counselors, district program managers, and NGOs. Cross-referral of HIV-positive mothers between ICTCs during delivery will be strengthened so that Nevrapine administration is not missed.

IV. PROPOSED RCH-HIV INTEGRATION MODEL IN UTTAR PRADESH

Goal, Objectives, and Strategies

The overall goal of RCH-HIV integration in UP is to prevent HIV transmission from mother to child in a sustained manner.

The objectives for achieving this goal are to

- Ensure universal coverage of all pregnant women with HIV counseling and testing;
- Ensure institutional deliveries of HIV-positive pregnant women; and
- Track and monitor HIV infection in children up to age 18 months.

The key strategies for achieving the desired outcomes include the following:

- Set up effective collaboration and coordination between the DoHFW and UPSACS to work toward the common goal of improving the well-being of mother and child by preventing vertical transmission of HIV.
- Identify public and private service delivery models to ensure that all HIV-positive women have institutional deliveries with the option of a Caesarean section and receive needed drugs and counseling. Scale up public-private partnership models to expand the base of healthcare providers in the state to respond to the need for increased institutional deliveries.
- Optimally use existing resources and schemes under the NRHM and UPSACS to expand testing, counseling, institutional delivery, and timely provision of ARV prophylaxis as well as family planning advice to all HIV-positive pregnant women.
- Engage related departments that can enhance the quality of services available to pregnant women.
- Institutionalize robust monitoring systems that are integrated into existing systems (to the extent possible) to ensure timely provision of high-quality services and adequate documentation to demonstrate results.

Proposed Activities: A Broad Overview

Activities that integrate HIV and RCH services for prevention of vertical transmission of HIV fall within the following broad categories (also see Figure 2):

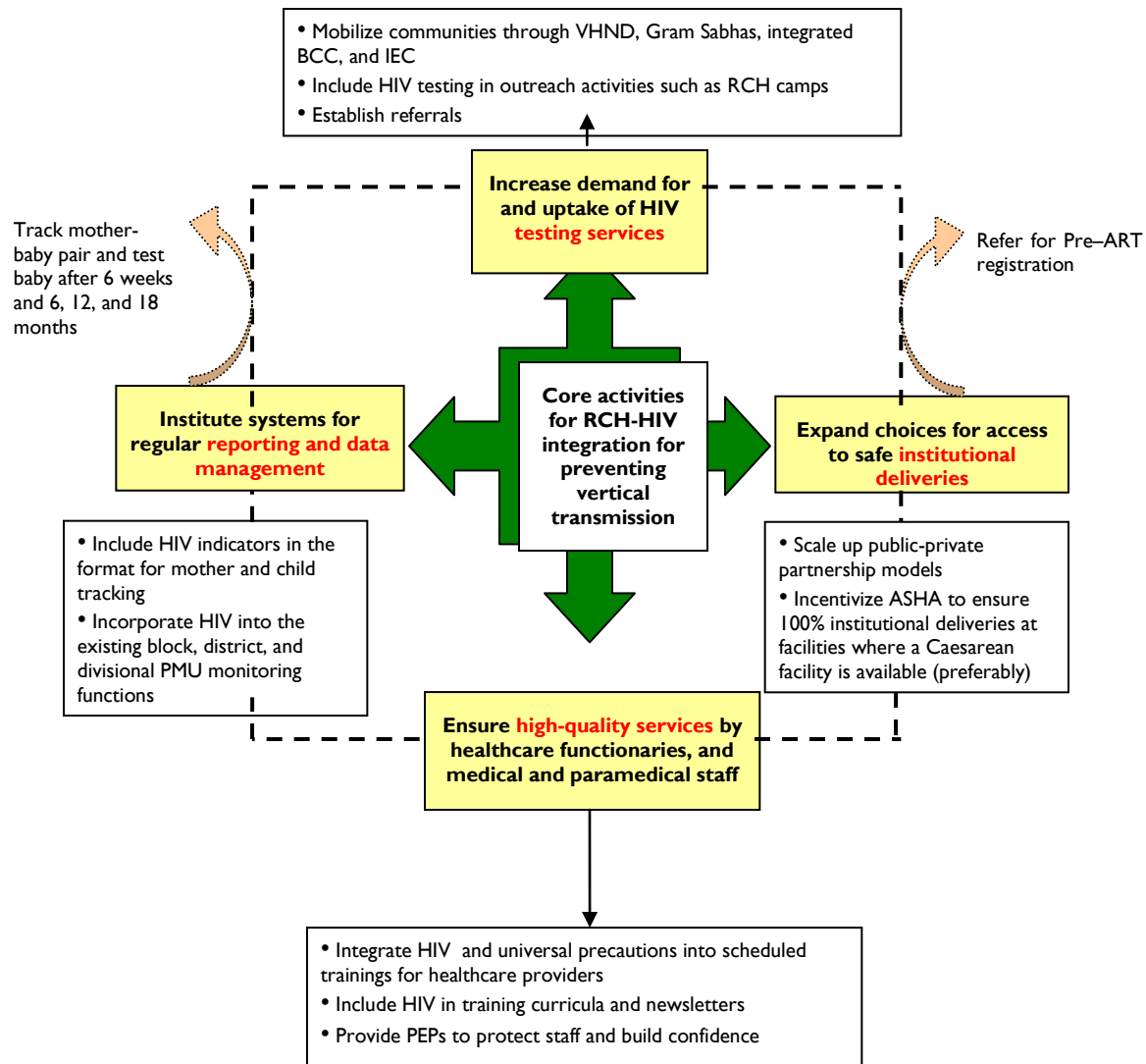
Primary function of NRHM-RCH service providers

- Expand testing services
- Ensure institutional delivery of HIV-positive pregnant women and promote Caesarean section delivery
- Sensitize and build the capacity of healthcare providers, including the medical and paramedical staff at the PHC, CHC, and district hospital levels 4; establish a rigorous reporting system to ensure adherence to proposed norms
- Refer for pre-registration of HIV-positive pregnant women at nearest ART center

Primary function of UPSACS

- Follow up with the mother-baby pair to assess the HIV status of the baby after 6 weeks, 6 months, 12 months, and 18 months and counsel the mother on breastfeeding, immunization, and so forth
- If the baby is HIV positive, refer the child to an ART center for CD4 assessment and needed action

Figure 2: Schematic Representation of Key Activities for RCH-HIV Integration to Prevent Mother-to-Child Transmission of HIV



Opportunities for Integration of Proposed Activities

The NRHM Annual Action Plan for 2010–2011 presents a strong rationale for integrated RCH-HIV services, laying out the policy framework needed for integration. Of the NRHM UP’s seven maternal health objectives (outlined in the Annual Plan 2010–2011), five are directly relevant to the prevention of mother-to-child HIV transmission:

1. Increase ANC coverage
2. Increase registration in first trimester
3. Increase institutional deliveries
4. Ensure management of complications during pregnancy and delivery
5. Ensure postnatal care

The proposed strategies and activities for the RCH component of the NRHM offer several entry points for integrating HIV information and services at minimal or no additional cost.

Increasing uptake of testing services

The first step in preventing mother-to-child transmission is to determine the HIV status of each pregnant woman. To this end, the Government of India's guidelines propose that more than 75 percent of all pregnant women in category A districts and 25 percent of all pregnant women in category C and D districts undergo HIV testing to identify those in need of HIV services to prevent vertical transmission. Provider-initiated HIV testing for pregnant women with the option to "opt out" is encouraged as a way to increase testing. Women receive group or one-on-one pre-test counseling and post-test counseling.

The NRHM has expanded testing services in response to increased demand associated with greater awareness at the community level about the need for and availability of testing facilities and an increase in service delivery points that provide testing. The NRHM will continue to increase awareness of and access to testing by piggybacking/integrating HIV-related information and services onto RCH activities. A sample of entry points identified by the state includes the following:

- Mobilization and provision of referral guidance to pregnant women during Village Health and Nutrition Days can take advantage of the presence of ASHAs, ANMs, and anganwadi workers (AWWs). A trained ASHA or ANM can provide information to pregnant women, emphasizing the need for voluntary testing and referring women to the nearest testing facility. In cases where HIV testing is proposed through the camp approach, ASHAs/ANMs can refer pregnant women to the camps. In this way, all pregnant women will receive basic education about HIV, which in the long run should help reduce HIV-related stigma. The AWW will also be motivated to use the same platform to educate HIV-positive pregnant women on breastfeeding to enable women to make an informed choice.
- Saas Bahu Sammelans brings together mothers-in-law and daughters-in-law to discuss issues of women's health and family planning. Held once a year at the block and subsequently at the district level, the event provides an opportunity to create a supportive environment for routine HIV testing by providing information to both elderly decisionmakers in the family and young potential mothers, emphasizing the importance of voluntary testing.
- Saloni is an NRHM initiative that reaches out to young adolescent girls with a focus on their health and well-being. It offers a platform for providing HIV/AIDS-related information to young girls through a community of peer support with other young girls.
- UPSACS and the Revised National Tuberculosis Program must coordinate activities and issue joint circulars to formalize partnerships. For example, the Revised National Tuberculosis Program's laboratory technicians and designated microscopic centers are engaged in testing but have no connection to or involvement with the state's AIDS control program.
- Medical officers in charge (MOICs) should coordinate with ICTCs to set fixed days for HIV testing combined with the other tests offered at ANC centers.
- The Swasthya Melas organized on the 1st, 2nd, 15th, and 16th of every month at CHCs is a potential entry point for HIV testing that warrants exploration. To facilitate rapid start-up, the camp could set up a desk to refer pregnant women and their spouses to ICTCs for testing. Later, ICTC laboratory technicians and counselors will be directed (through a circular) to make counseling and testing services available during the mela on a fixed day every fortnight on a

rotating basis. UPSACS would provide the test kits. ASHAs and ANMs could motivate pregnant women to seek testing during the melas at their convenience.

- UPSACS will organize several initiatives that will provide a platform for mobilizing communities to get tested, especially pregnant women:
 - Gram sabha sensitization programs proposed for 100 gram sabhas per district for 10 districts
 - Radio programs
 - Wall writing and other media
 - Engagement of NGOs
 - Migrant information centers that target migrant men with information and messages to increase their awareness of HIV, its mode of transmission, the importance of protecting their wives from HIV, and the need for their wives to receive ANC and get tested for HIV during pregnancy to ensure the birth of a healthy infant.

UP is one of the states piloting the whole-blood finger prick.¹³ The Government of India is developing systems to devolve the test to the sub-center, where ANMs will perform the test. Results are available in less than 30 minutes. Those who test positive are referred to ICTCs for confirmatory tests. The pilot proposes to cover all category A districts but will likely be made available to all last-minute walk-in cases across the state. In view of RCH-HIV integration efforts, the state will negotiate for coverage of all districts where integration is introduced.

Urban slum areas offer relatively few schemes for free testing services for women. The voucher scheme now being scaled up in all five “KAVAL” towns of UP—Kanpur, Allahabad, Varanasi, Agra, and Lucknow—provides for ANC and PNC and could cover testing for HIV if included in the list of services. UPSACS is also expanding testing through engagement of private providers in urban areas in partnership with 28 private hospitals. UPSACS provides free testing kits, and the hospital reports the test results to UPSACS.

Ensuring institutional deliveries

HIV transmission from mother to baby occurs during pregnancy, during childbirth, or through breastfeeding, making institutional delivery, preferably through Caesarean section, of vital importance. When HIV-positive women choose to deliver in an institution, they receive Nevrapine at the onset of labor, and their babies receive Nevrapine (syrup) within 72 hours of birth.

Uttar Pradesh has a robust RCH program, and the government is committed to further strengthening RCH services in order to achieve the Millennium Development Goals 4 and 5.

- The RCH program’s ongoing mission to strengthen JSY’s core elements, including ANC and institutional delivery, will increase the probability that HIV-positive pregnant women deliver in an institution and receive PPMTCT services.
- The NRHM will integrate HIV-related information for pregnant women into the behavior change communication (BCC) strategy, which stresses the importance of ANC and institutional deliveries. Organizations contracted to develop the RCH BCC strategy will be tasked with integrating HIV where appropriate and possible.
- UP is considering a proposal to provide ASHAs with an additional incentive of Rs.200 (approximately US\$4.5) for each HIV-positive woman’s institutional delivery. Such women need to deliver by Caesarean section in a district hospital and often need more home visits to enable

¹³ A finger-prick (or finger-stick) sample is a sample of whole blood that is obtained from capillaries (tiny blood vessels) in the finger rather than from a vein. It is considered a “minimally invasive” technique; most rapid tests use finger-prick samples.

the ASHA to speak to other family members. The additional incentive will also encourage the ASHA to provide needed support to HIV-positive pregnant women. The required funding may come from either the untied grants of NRHM or UPSACS funds, as appropriate.

- UPSACS and the RCH program can increase institutional deliveries by coordinating with the Merigold and Merisilver clinics and scaling up the voucher scheme and the Saubhagyawati scheme.

Capacity building and sensitization of healthcare providers

Once an HIV-positive pregnant woman elects institutional delivery, it is imperative that she receive required services at her ANC, delivery, and PNC visits. This requires training, sensitization, and ongoing engagement of medical and paramedical staff and other concerned providers.

Before planning sensitization training for healthcare providers, the first step is to identify the providers most likely to be involved, understand their skill levels, and discuss the potential role each can play (see Annex C). (For detailed roles and responsibilities, see Section V.)

UPSACS has already undertaken an initiative to sensitize medical and paramedical staff at district hospitals on HIV/AIDS. In addition, it has proposed the following activities to strengthen services:

- Sensitize all staff/service providers by including appropriate modules on HIV/AIDS prevention, treatment, and care in training/orientation sessions. UPSACS, its Technical Support Unit, and NRHM staff at the state level will need to plan training courses jointly and coordinate with district and sub-district NRHM staff.
- Build the capacity of doctors and paramedical staff to engage in universal precautions, infection prevention, and appropriate waste management so that they may care for HIV-positive women. The training should be onsite. District hospital staff trained by UPSACS may be involved in orienting PHC and CHC staff. HIV/AIDS Annual Action Plan (2010–2011) proposes PPTCT team training. The chief medical officer's (CMO) monthly meeting with MOICs presents a good opportunity to provide relevant information.
- Develop and implement a system to stock post-exposure prophylaxis (PEP) kits and Nevrapine for both mother and baby in all hospitals/health centers where HIV-positive pregnant women deliver. To this end, ICTCs will receive information from the ASHAs/ANMs on the delivery plans for HIV-positive women and share the information with the officer in charge of the PPTCT Program at UPSACS. A similar information flow system will need to be established between the District Technical Officer (DTO) and the concerned UPSACS staff.
 - This basically means that a system will be developed and implemented whereby PEP and Nevrapine will be stocked and made available in the facilities where women go for delivery. The information on where the women will deliver will be provided to ICTCs by ASHAs and ANMs who are supposed to follow up with HIV-positive women and provide support. The ICTC in-charge, in turn, informs the PPTCT program at UPSACS on the need of PEP and Nevrapine.
 - A similar system of reporting will be set up between the DTO, who basically looks after the RCH program and UPSACS to ensure that both the departments are aware of the status of service provided to the women.
- Conduct refresher training and reorientation for ASHAs during the proposed ASHA Sammelans at the district level. The reorientation of ASHAs will provide an opportunity to include an HIV/AIDS module. While waiting for refresher training, the ASHAs will receive support and

training from the ANMs during their regular meetings. In turn, the ANMs can be oriented by the Medical Officers Primary Health Centers (MOPHCs) during their regular meetings.

- Build the capacity of DTOs who are the nodal officers for HIV/AIDS at the district level. A session on their roles vis-à-vis integration should be incorporated into their already planned training.

Setting up a rigorous monitoring system

The success of integration depends on the convergence of existing RCH and HIV/AIDS planning and service delivery systems at all levels to ensure the provision of seamless services to pregnant women. More than merely identifying the points of convergence, success requires a shift in the mindset of and the way in which the two sets of service providers work. As government embarks on organizational and behavior changes, the role of monitoring and review becomes critical to ensuring that systems are not only established and operational but that they also function until they are fully institutionalized and no longer require external enforcement.

Proposed activities and opportunities for collaboration exist in the following areas:

- The state is in the process of rolling out a mother-and-child tracking system with indicators for both RCH and FP. HIV indicators should be included for both HIV-positive pregnant women and their babies. UP will then have a single format for tracking and reporting on HIV-positive women, mothers, and their babies.
- The master register of ASHAs should include relevant HIV indicators. For example, HIV testing and referral may be included as a reporting line for JSY to indicate that the ASHA referred the pregnant woman for testing and subsequently followed up and referred her to the ART center. ANC and PNC activities would accordingly include HIV referral and follow-up.
- The Health Management Information System should be revised to include HIV indicators in the reporting system.
- HIV should be an agenda line item at all review meetings at the district and subdistrict levels, e.g., Block Health Education and Information Officer/ANM meeting with groups of ASHAs; MOIC meeting with ANMs; CMO meeting with MOICs; Health Secretary's meeting with CMOs, Deputy Chief Medical Officers, and so forth.
- A small unit should be created at the state level for exclusively monitoring the integration process; it should include staff from UPSACS/Technical Support Unit and NRHM. The team must have access to division and district staff as well as to the Principal Secretary/Secretary Health to ensure the institutionalization of formal reporting. In Uttar Pradesh, the Divisional Project Management Unit (PMU) of NRHM plays an active role in program management by covering a cluster of divisions and therefore is a logical first point of contact for the state monitoring team.

Follow-up and provision of treatment for mother-baby pairs

Follow-up and treatment is an integral component of the package of services to be provided to all pregnant women testing positive and to their babies. Follow-up begins when a pregnant woman tests positive and continues until her baby is 18 months old. It involves close coordination between and among the District AIDS Prevention and Control Unit (DAPCU) officer/DTO, ICTC staff, and the ANM/ASHA, who communicate regularly with mother and baby. It also involves the Anganwadi worker who provides nutritional advice to the expectant and nursing mother.

In addition to pre-registration of HIV-positive pregnant women at the nearest ART center, mother-baby pairs must make follow-up visits after delivery at 6 weeks, 6 months, 12 months, and 18 months. The ANM and ASHA are responsible for ensuring that the mother-baby pairs visit the ART center for follow-up. An incentive may be considered for the ASHA who helps the mother-baby pair complete the 18-month schedule of visits. (See Annex D for tasks at each follow-up.)

Enabling Factors for Making Integration Work

A study of good practice models reveals particular factors that create an enabling environment for integration (see Figure 3). Such factors include the following:

Committed policymakers

Integration is not possible without committed policymakers in all relevant departments. Policymakers at the highest level must approve the integration concept and provide leadership for the following:

- Issue circulars, policy guidelines, office orders, and so forth to formalize integration.
- Ensure that integration is included in meeting agendas and reporting formats.
- Make sure that pipeline initiatives such as the mother-and-child tracking system, facility-integrated services, and so forth are operationalized on time.
- Ensure needed commitment at operational levels for coordination and adherence to agreed protocols among program managers and implementers at the state, district, and block levels. For example, the Deputy CMO (in charge of RCH) must necessarily be on board for integration to work.
- Provide needed budget support when and if needed.

A cadre of human resources

Adequate human resources need to be in place to ensure seamless service delivery. It must be noted that, in principle, integration does not make a case for an expanded workforce but instead relies on strategies to optimize the services of existing service providers while minimizing burden on service seekers. With its several vacant positions for healthcare providers, UP must analyze its core capacity based on the strength of existing human resources. For example, the cadre of ASHAs has been fully trained and is functioning efficiently and therefore could be the first point of contact for HIV-positive pregnant women. Similarly, the Regional PMUs from the NRHM function efficiently and cover a cluster of districts and could be involved in oversight, monitoring, and follow-up.

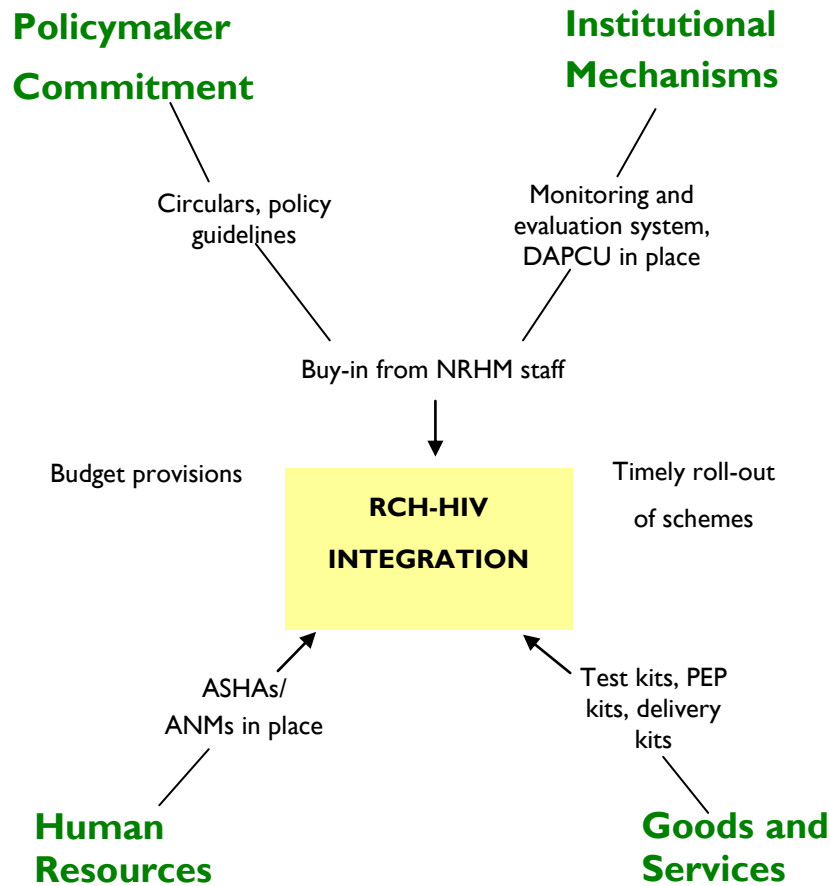
Institutional mechanisms

In a low HIV prevalence state such as Uttar Pradesh, only a limited number of DAPCUs are in place (five in category A districts). In such situations, the government could potentially mobilize district TB Officers to serve as HIV/AIDS nodal officers at the district level for coordination. Similarly, enough hospitals and health centers need to be in place to ensure that all pregnant women have access to institutional deliveries. Existing government health centers could be supplemented with private healthcare providers and hospitals through innovative public-private partnership models such as the voucher system.

Efficient logistical management

Logistical needs require the timely supply of goods and commodities such as safe delivery kits; PEP kits to protect medical and paramedical staff in case of exposure to HIV; and test kits and Nevirapine (tablets and syrup) for mother and child in hospitals/healthcare centers offering delivery service. In addition to ensuring an uninterrupted supply of goods, the government must include new facilities in future commodity forecasts and mobilize additional kits and medicines in view of the increase in demand for prevention, care, and treatment services as a result of integration.

Figure 3. Enabling Factors for Integration



V. ROLES AND RESPONSIBILITIES OF KEY STAKEHOLDERS

One prerequisite of an initiative of the magnitude of integration is the clear articulation of the roles and responsibilities of all key service providers and decisionmakers at the macro and micro levels.

At the macro level: the broad roles of the NRHM and UPSACS include the following:

- NRHM/DoHFW will lead and take full responsibility for integration, including
 - Strengthening the policy framework and health systems to provide institutional and outreach care to all pregnant women, including those living with HIV
 - Providing budget support to fill implementation gaps as needed
 - Ensuring a robust and integrated monitoring and evaluation system, including follow-up of mother-baby pairs for 18 months
- UPSACS will provide all needed HIV-related services and information, including
 - Providing high-quality counseling and testing services to all pregnant women
 - Making test kits and drugs available
 - Arranging needed training resources (both material and trainers) for HIV/AIDS

At the field level: The team of ANMs, ASHAs, AWWs, MOPHCs, in-charge district hospitals, and ICTC staff will coordinate.

At the district level: The CMO and Deputy CMO will ensure appropriate coordination and monitoring.

At the divisional level: The Divisional PMU of NRHM will work closely with the Director of Health to provide needed oversight and monitoring, liaising directly with the state team.

At the state level: A small management and monitoring team consisting of one person from UPSACS/Technical Support Unit (an expert in either PPTCT or mainstreaming) and one person from the Directorate of Health will collect needed information and updates from divisional and district staff and report to the Mission Director of NRHM and Principal Secretary of Health and Family Welfare on a daily or weekly basis initially and on a monthly basis thereafter.

As implementation takes place at the district and subdistrict levels, the roles of all key implementers **at the micro level** are described in greater detail (see Annex E).

VI. EXPECTED RESULTS

Uttar Pradesh can expect to achieve the following results:

- Increased number of registered antenatal cases
- Increased pre- and post-test counseling
- Increased number of persons tested and testing HIV positive (at least initially with new cases detected as a result of increased uptake of testing)
- Increased number of spouses seeking HIV testing
- Increased number of mother-baby pairs receiving Nevrapine
- Increased number of HIV-positive women making follow-up visits at 18 months
- Increased number of HIV-positive babies detected at the end of 18 months (initially, the number will increase as lost-to-follow-up cases are traced, but program success lies in reducing incidence and prevalence among babies born to HIV-positive women)
- Increased number of women seeking treatment

In short, the program will boost Uttar Pradesh's RCH and HIV indicators. Full operationalization of the RCH-HIV integration model will require the NRHM and/or DoHFW to undertake the following broad steps:

- Formal approval and adoption of the task force recommendations for RCH-HIV integration by the Principal Secretary of Health and Family Welfare, Government of Uttar Pradesh
- Dialogue with key collaborators to build consensus
- Issuance of circular or departmental order formally announcing roll-out of the model
- Preparation and dissemination of reporting formats and operational guidelines to ensure consistent, standard, and uniform messaging down to the level of the last service provider in the state healthcare delivery system

VII. FINANCIAL IMPLICATIONS

The process of integration maximizes the benefits to end-users through efficient coordination and convergence of existing services without requiring additional funds. Cost-effectiveness is one key factor in sustaining models of integration. In an ideal situation, integration should incur no added costs,

permitting the rapid launch of activities without protracted financial clearance processes. Steps and approaches for minimizing/sharing costs include the following:

1. **Training.** Integrate all HIV- and PPTCT-related training into the NRHM's ongoing training programs. UPSACS will prepare modules for inclusion in the RCH/NRHM-funded training for healthcare providers and can provide master trainers from its existing training budget.

Cost implication: None or negligible. However, in instances where a cadre such as DTOs need to be trained and no existing program can cover the training, some costs may be incurred under the respective program (e.g., Revised National Tuberculosis Program for DTO training).

2. **Review.** Regular weekly or monthly monitoring and review meetings are organized at the block, district, and state levels under the aegis of the MOPHC (with ANMs and ASHAs), CMO (with all MOs), and Principal Secretary of Health and Family Welfare (all CMOs and Deputy CMOs), respectively. Integration-related issues may be built into the agenda for regular updates and reporting. To this end, the department may need to issue an order that all such meetings include integration as an agenda line item and then report on its progress regularly.

Cost implication: None.

3. **Ongoing reporting.** The state health program's internal reporting system includes formats, personnel, and technical resources for regular data collection. It is important to introduce relevant PPTCT- and HIV-related indicators into the formats. For example, information on HIV-positive pregnant women and mother-baby pairs may be included in the mother-and-child tracking system.

Cost implication: None or negligible.

4. **Institutional deliveries.** The state has adopted public-private partnership models such as social franchising and the voucher scheme for cashless delivery. UP is currently taking the voucher scheme to scale. The Saubhagyawati scheme (an insurance scheme for providing cashless services to pregnant women) has had limited success. However, JSY has produced a rapid increase in the number of institutional deliveries facilitated by ASHAs who receive a fixed amount as an incentive for every delivery. To ensure that all HIV-positive pregnant women have access to free institutional deliveries, including the option for a Caesarean section, it may be necessary to provide additional incentives to ASHAs in recognition of the additional effort needed to mobilize family support for HIV-positive women, deal with stigma and discrimination, and, in most cases, transporting the woman to the district hospital.

Cost implication: Based on the amount offered as an additional incentive to the ASHAs for HIV-positive pregnant women's institutional deliveries, UPSACS and NRHM could cost share by using untied grants from the NRHM and PPTCT budget of UPSACS. Other costs such as for transportation of pregnant women could also be covered under NRHM's untied grants.

5. **Testing services outreach.** In the beginning, a camp approach will address the testing backlog and require laboratory technicians and counselors to travel to outreach areas to provide testing and counseling services at the PHC and CHC levels (most districts in UP do not have such facilities at these levels). Such an arrangement will most likely be needed only in the first year and will require ICTC staff to be provided with technical assistance and an allowance to cover their outreach costs. Costs may also be incurred if meals are provided to women who visit the camps for testing, enabling them to stay for the day and collect their results before they leave.

Cost implication: The small amounts to cover the technical assistance and allowance of ICTC laboratory technicians and counselors might come from the NRHM untied grants or additional

allocations. Funds allocated to the Rogi Kalyan Samitis may also be used to provide meals to pregnant women who seek testing.

6. **Human resources.** Overall, no new human resources need to be recruited for the integration initiative. Instead, key persons from each partner organization should be engaged in the program. However, the need for extra data entry operators may arise in the case of substantial increases in data collection and compilation.

Cost implications: None in the first year. However, if additional data entry operators are needed in the case of additional workload, funds will be needed for their hiring and training and for additional computers.

7. **Awareness raising and community mobilization.** IEC materials may be needed to increase awareness among the general population and especially pregnant women about important HIV- and PPTCT-related issues. The materials could be printed and disseminated under the UPSACS IEC budget. The same budget might cover other forms of media such as radio, television, signage, wall writing, and so forth. The VHND provides a ready platform for mobilization and referrals for testing (see Figure 4).

Cost implications: None or negligible.

Figure 4: Event Schedule of Activities for VHND and How HIV Information, Counseling, and Referrals May Be Integrated

Khushali Diwas—VHND			
Mobilization	Step 1: ASHA prepares list of routine immunization, ANC, and PNC beneficiaries and list of beneficiaries for group meetings by topic		} Include HIV-positive pregnant women and their babies up to 18 months
	Step 2: 4 to 5 pairs of Bal Chetaks ensure that most infants in village are brought to a routine immunization session		
Service delivery at village level	10:00–11:30am	Routine Immunization: Infants and children for vitamin A dose (about 15 to 20 children); 5 to 6 school children to mobilize; ANM to give immunization	} Counsel women to go for HIV test and provide referrals to care and treatment
	11:30–to 1:00 pm	ANC check-up and Iron Folic Acid +Tetanus Toxoid+BCC (during about 12 to 15 ANC visits) + PNC Check-up and advice on family planning	
	1:00–to 2:00pm	Refreshments	
	3:00–to 4:00pm	Group meeting by ANM	
Community event	5:00–6:30pm	Local community event (organized by the Village Health and Sanitation Committee and Multi-Purpose Worker) <ul style="list-style-type: none"> • Felicitation of ANM/ASHA/role models • Panel discussion 	
BCC and Outreach Services during VHND			
1. Routine immunization		2. Contraceptive services	} Awareness about HIV and importance of testing and referral to ICTCs and if HIV-positive to ART center
3. ANC and PNC check-ups		4. Directly Observed Treatment, Short course for TB	
5. Local events planned by village health and sanitation committee		6. BCC through group meetings	
7. Child-community activities: Bal Chetaks responsible for ensuring complete immunization of infants, booster shots and vitamin A for older children, identification of malnourished children, and nutrition counseling			

ANNEX A. AFASS CRITERIA AND KEY QUESTIONS

The healthcare provider must ask a set of questions (below) to determine mothers' readiness and eligibility for exclusive formula feeding (EFF). For HIV-positive women who do not meet *all* the AFASS criteria, the health and child survival benefits of exclusive breastfeeding should be emphasized.

Acceptable: The mother perceives no barrier to choosing and executing the option for cultural or social reasons or for fear of stigma and discrimination.

- Is EFF acceptable to the mother?
- Are there cultural or social reasons that could create a problem if the mother were to choose formula feeding?
- Does the mother fear stigma or discrimination if she were to choose replacement feeding?

Feasible: The mother (or family) has adequate time, knowledge, skills, and other resources to prepare for feeding and then feed the infant. The mother also has the support needed to cope with family, community, and social pressures.

- Is the mother able to begin EFF correctly for the required six-month period?
- Does the mother or caregiver have enough time, knowledge, skills, resources, and support to correctly prepare breast -milk substitutes? Is she able to feed the infant 8 to 12 times in 24 hours?

Affordable: The mother and family, with available community and/or health system support, can pay for the purchase/production, preparation, and use of the feeding option, including all ingredients, fuel, and clean water and equipment, without compromising the family's health and nutrition spending.

- Is the mother able to afford the costs of EFF?
- Can the mother pay for the costs of buying, preparing, storing the formula without compromising the family's health and nutrition?
- NOTE: Costs cover ingredients/supplies, fuel, clean water, and medical expenses that may result from unsafe preparation and feeding practices.

Sustainable: Availability of a continuous and uninterrupted supply of and dependable distribution system for all ingredients and commodities needed for safely implementing the feeding option for as long as the infant needs it.

- Will the mother be able to continue with EFF for the recommended 6-month period once she has begun?
- Will the mother be able to have a continuous, uninterrupted supply of replacement food (e.g., formula)?
- Will the mother have the products (e.g., boiled water) needed for safely practicing ERF?

Safe: Formula is correctly and hygienically prepared by clean hands, using clean, safe water and clean utensils. Nutritionally adequate quantities of formula milk are regularly available. Clean water and fuel are regularly available. Formula is fed with use of clean hands and utensils and preferably with cups rather than bottles.

- Will the mother be able to practice EFF safely?
- Will the mother be able to prepare and feed EFF with clean water, clean hands, clean cups, and other utensils, but not bottles or teats?
- Will the mother be able to store the replacement food correctly?

ANNEX B. 21 PRIORITY DISTRICTS FOR INTEGRATION

Sl. Number.	Name of District	Category
1	Allahabad	A
2	Banda	A
3	Deoria	A
4	Etawah	A
5	Mau	A
6	Agra	C
7	Azamgarh	C
8	Basti	C
9	Ghaziabad	C
10	Gorakhpur	C
11	Jalaun	C
12	Jaunpur	C
13	Kanpur Nagar	C
14	Kushinagar	C
15	Lucknow	C
16	Meerut	C
17	Moradabad	C
18	Pratapgarh	C
19	Sant Kabir Nagar	C
20	Siddharth Nagar	C
21	Varanasi	C

ANNEX C. GENERAL ROLES AND RESPONSIBILITIES OF KEY PERSONNEL

Activity	Key Personnel	Type of Skill/Knowledge Needed
Pregnant women mobilized for testing	ASHA and ANM	Knowledge of HIV, risk/vulnerability, vertical transmission, testing, treatment; information about available testing services/facilities and AFASS criteria
Pregnant women get testing and counseling services	ICTC counselors and in-charge ICTC	Counseling skills, testing skills and expertise, importance of confidentiality and how to maintain it
HIV-positive women plan their delivery (involving their family)	ASHA, ANM, MOIC, DTO or DAPCU officer, DCMO (RCH)	Knowledge of safe delivery for HIV-positive women and universal precautions; information about institutional services in the region; counseling skills
HIV-positive pregnant women get ANC	ASHA, ANM, MOIC, paramedic staff	Knowledge about HIV in pregnant women, vertical transmission, stigma and discrimination
HIV-positive pregnant women able to deliver safely in hospital (preferably by Caesarean section)	MOIC, paramedic staff at health center, ANM, ASHA	Information about Nevrapine, CD4, universal precautions, and so forth; ability to deal with stigma
Advice on safe breast feeding, nutrition, and so forth (during VHND and at home)	ASHA, ANM, AWW	Knowledge about advantages and disadvantages of breastfeeding among HIV-positive women and special nutritional requirements of HIV-positive pregnant women
PNC for HIV-positive women	ASHA, ANM	Knowledge about HIV/AIDS testing, treatment and care, family planning, and infant feeding
Follow-up of mother-baby pairs	ASHA, ANM, ICTC staff	Information on HIV monitoring, testing, and care for mothers and infants up to age 18 months; information about ART centers; skills to counsel family members on care and support

ANNEX D. KEY TASKS FOR FOLLOW-UP AND TREATMENT FOR MOTHER-BABY PAIRS

At 6 Weeks	
MOTHER	BABY
Referral to district ART center for repeat CD4 count	Start CPT (Co-trimoxazole prophylactic therapy)
Educate mother on AFASS criteria and enable her to determine the baby's feed based on carefully considered options per the criteria	Selected ICTCs are undertaking DNA Polymerase Chain Reaction testing for early infant diagnosis of HIV: <ol style="list-style-type: none"> i. Dry blood spot testing (DBS) ii. If DBS is positive, send to ART center for whole-blood test and CD4 estimate iii. Start CPT iv. If DBS is negative, STOP CPT v. Ensure pediatric ART initiation based on CD4 count
Provide information to mother on weaning after 6 months	Arrange for good nutrition for babies initiated on ART
	Immunize baby after pediatric examination
	Growth monitoring
At 6 Months	
Referral to district ART center for repeat CD4 count	Mothers informed about AFASS criteria to ensure baby receives most appropriate form of feed
Advice on weaning per AFASS criteria	Ensure that weaning foods are introduced per AFASS criteria
Continue nutritional supplements for postnatal mother for up to 6 months	Continue CPT for HIV-positive babies only
Advice on family planning methods—either temporary such as intrauterine devices or pills or permanent such as sterilization-vasectomy (male) or tubectomy (female)	Immunize after pediatric examination
	Growth monitoring
At 12 Months	
Referral to district ART center for repeat CD4 count	Ensure completion of primary immunization, including measles vaccine (after examination by pediatrician)
	Growth monitoring
	Ensure that baby takes age-appropriate diet
	Continue CPT in all HIV-positive babies
At 18 Months	
Referral to district ART center for repeat CD4 count	Refer to closest ICTC for HIV testing—3 Rapid tests for final confirmation of baby's HIV status If baby tests positive, refer to district ART center in district hospital for CD4 estimate (CD4 percentage for children) and needed treatment

ANNEX E. ROLES AND RESPONSIBILITIES OF KEY STAKEHOLDERS

Implementer	Roles and Responsibilities
Chief Medical Officer (CMO)	The CMO is the administrative head of all health programs in the district. All MOs and program officers report to him/her. S/he plays an important role in issuing orders and circulars to all health staff to implement the integration program.
Deputy CMO (RCH)	<p>The Deputy CMO in charge of RCH is in charge of the district's reproductive and child health program. His/her responsibilities could include:</p> <ul style="list-style-type: none"> • Maintaining a list of HIV-positive pregnant women in the district • Maintaining and periodically updating the master register to ensure that details are recorded regularly • Birth planning along with MO, PHC, and HIV-positive pregnant women to identify the hospital for the delivery, including transportation arrangements for delivery • Coordinating with the identified hospital and ensuring availability of delivery kits and Nevrapine tablets/syrup in the hospital • Stocking additional doses of Nevrapine in case of emergencies • Coordinating and transferring cases to the appropriate counterpart if an HIV-positive woman plans to deliver in another district • Updating UPSACS and Program Director of RCH on progress
DAPCU Officer (or DTO in absence of DAPCU)	<p>S/he is the district's nodal person for all HIV/AIDS activities and is responsible for framing and implementing the district's strategy for HIV prevention and control. S/he is the local person responsible for ensuring that the HIV component of the integration program is delivered appropriately. Specifically, s/he will:</p> <ul style="list-style-type: none"> • Contribute to planning and implementing integration activities • Train and orient the staff involved in implementation • Supervise and support program activities as needed • Monitor and facilitate the tracing of lost-to-follow-up cases, HIV detection during ANC for pre-ART registration; CD4 estimation and initiation of ART; testing of spouse/partners/children by sharing details with the Deputy CMO and MOPHCs, including line-lists of clients diagnosed with HIV during ANC who did not come back for follow-up; share the information at monthly CMOs meeting without divulging names except in need-to-know instances. • Sensitize various stakeholders to integration
MOs in charge of PHCs	<p>MOs are the administrative heads at the PHC level. For integration, their roles and responsibilities could include:</p> <ul style="list-style-type: none"> • Signing HIV test results of pregnant women • Referring all HIV-positive pregnant women for registration at the ART center • Ensuring that ANMs follow up with (1) every client diagnosed with HIV during ANC with needed services and (2) every mother-baby pair for 18 months either directly or through ASHAs • Addressing various village meetings to sensitize the community to the services/schemes available at the PHC
ICTC Counselor	<p>Provide pre- and post-test counseling services to women who make ANC visits.</p> <ul style="list-style-type: none"> • Conduct outreach camps in PHCs on a rotating basis • Counsel and motivate pregnant women in their second trimester to get tested for HIV • Register pregnant women per normal coding procedures • Encourage women to bring their partners/spouses for HIV counseling and testing

	<p>by using a “family-centric approach” rather than an “ANC-centric approach” to ensure the family’s wellness</p> <ul style="list-style-type: none"> • Ensure sputum testing at district medical centers (the Revised National Tuberculosis Program units for suspected TB patients) • Refer infected couples/women to ART centers for CD4 tests • Develop quarterly action plans for outreach services and share and implement them with MOs and ANMs • Coordinate with MOs, ANMs, and outreach workers for follow-up activities directly or through DAPCU officers/DTOs • Train hospital all staff nurses in pre-test/post-test counseling • Maintain all necessary records
ANM (and/or ASHA)	<p>ANMs play a major role in mobilizing women who visit ANC clinics to access HIV prevention and care services. ASHAs support the ANMs in mobilizing women for ANC visits and for HIV testing. They undertake the following:</p> <ul style="list-style-type: none"> • Ensure registration of all antenatal cases in first trimester • Provide counseling to all clients testing positive for HIV during ANC and spouses and children who have not been tested on the importance of knowing their HIV status • Maintain shared confidentiality with the Deputy CMO when pregnant women test positive; for confidentiality reasons, speak with ANC clients at the sub-center rather than at home if they are hesitant about testing • Mobilize all pregnant women in their second trimester to visit the ICTC or camps at the PHC • Participate in VHND to educate pregnant and lactating mothers and to mobilize and refer them for testing Accompany HIV-positive women to the hospital for delivery and ensure administration of tablet/syrup Nevrapine • Follow up with mother-baby pair at 6 weeks, 6 months, 12 months, and 18 months • Update the Deputy CMO through the MOPHC • Motivate all delivered cases to adopt a family planning method at 6 months (intrauterine device immediately) and motivate spouse for non-surgical vasectomy only if reluctant about tubectomy after 2 years
Laboratory Technician	<ul style="list-style-type: none"> • Draw blood samples from women who elect testing and test sample for HIV infection • Make sure that blood is drawn and tested at the PHC and that test results are made available on the same day • Draw blood of women in the poorest socioeconomic strata and of HIV-positive ANC clients whose CD4 counts were not estimated a month after detection; collect blood in vacutainers for transport to ART center in vaccine carrier; collect CD4 report and hand over to ANC clinic after documentation
Link Worker	<p>In the districts where the Link Worker Scheme is operational, Link Workers provide HIV prevention and care services to at-risk populations, including pregnant women in rural areas. Their involvement in integration may be limited but could include the following:</p> <ul style="list-style-type: none"> • Motivate ANC clients to visit AWW centers • Attend all meetings called by Anganawadi workers (meetings for pregnant women, self-help group meetings, and so forth) when they provide information about HIV services • Undertake ART follow-up • Mobilize spouses of HIV-positive ANC clients for counseling and testing

Peer Outreach Worker/Peer District Networker	Peer outreach workers, peer educators, and district networkers from PLHIV networks work with ANM or individually to: <ul style="list-style-type: none"> • Disclose a woman’s HIV-positive status to her spouse when HIV is detected during ANC • Subtly motivate spouse/children to agree to HIV counseling and testing and subsequent related activities • Follow up at HIV-positive ANC clinic to minimize lost-to-follow-up cases: pre-ART registration; CD4 estimation; ART initiation; compliance with ART; mother-baby pair follow-up; FP and psychosocial counseling • Provide support for social entitlements and resolution of legal issues
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