The impact of changes in HIV testing and treatment guidelines on maternal health and survival in Namibia

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Executive Summary

2015 is quickly approaching and HIV and maternal mortality remain the two top causes of death for women of reproductive age both globally and in sub-Saharan Africa. The year 2015 is significant because it represents the target date set by the United Nations (UN) and all its member countries to end poverty and hunger; combat HIV, Malaria and other diseases; improve maternal health; and significantly reduce child mortality through eight international development or Millennium Development Goals (MDGs). These goals, which were officially established in 2000 following adoption of the UN Millennium Declaration, aim to encourage the world’s poorest countries to reach development milestones through the improvement of social and economic conditions. Of the eight goals, MDG 5 aims to improve maternal health through the reduction of maternal mortality, and MDG 6 aims to combat HIV, malaria and other diseases by reducing disease prevalence and ensuring universal access to treatment and prevention services (Appendix A).

Women in developing countries have on average many more pregnancies than women in developed countries, and their lifetime risk of death due to pregnancy is higher. A woman’s lifetime risk of maternal death – the probability that a 15 year old woman will eventually die from a maternal cause – is 1 in 3800 in developed countries, versus 1 in 150 in developing countries. Complications such as post-partum hemorrhage, infections after childbirth, high blood pressure during pregnancy (pre-eclampsia and eclampsia), and unsafe abortion account for 80 percent of all maternal deaths. The remaining 20 percent are caused by or associated with diseases such as HIV and malaria during pregnancy [58]. If the world is going to reach MDG 5 or 6, all countries must significantly reduce maternal mortality. About 800 women die from
pregnancy or childbirth-related complications around the world every day. In 2010, 287,000
women died during and following pregnancy and childbirth with 99 percent of these
preventable deaths occurring in developing countries [58].

Maternal death is the death of a woman while pregnant or within 42 days of termination of
pregnancy from any cause related to or aggravated by the pregnancy or its management [59].
The Maternal Mortality Ratio (MMR) compares the number of maternal deaths in a given year to
the number of live births occurring in that year. MMR can differ significantly from developed to
developing countries. The maternal mortality ratio in developing countries averages 240 per
100,000 live births versus 16 per 100,000 live births in developed countries [58]. Many sub-
Saharan countries such as Central African Republic (890), Sierra Leone (890), Sudan (730), and
Nigeria (630) still experience high MMR. In Namibia MMR doubled from 225 to 449 per 100,000
live births between 1992 and 2006/07. This increase translates to an estimated 350 mothers
dying from pregnancy-related causes every year despite high rates of prenatal care and delivery
in health facilities [1]. The high number of maternal deaths in developing countries reflects
inequities in access to health services, and highlights the gap between rich and poor.

Likewise, HIV/AIDS accounts for 19 percent of all deaths worldwide for women aged 15 - 44
years [2] and sub-Saharan Africa has the highest proportion of maternal deaths due to HIV (10
percent). In 2010, of the estimated 19,000 maternal deaths attributed to HIV globally, 17,000 (91
percent) are in sub-Saharan Africa. For some countries such as Botswana, Lesotho, Namibia,
South Africa, and Swaziland, MMR increased between 1990 and 2000 mainly as a result of the
HIV epidemic. In these countries MMR is now declining as antiretroviral therapy (ART) is
becoming increasingly available [3]. High MMR coupled with a high burden of HIV means that
pregnant women are confronted with the dual risks of death associated with advancing HIV disease as well as an increased risk of pregnancy-related mortality. By strengthening HIV services for pregnant women to include expanded and comprehensive testing, counseling, treatment, and care, HIV-related MMRs can be dramatically reduced. Integrated approaches to service delivery are needed and will benefit HIV-positive women and their children by providing them with improved HIV care and treatment, greater access to reproductive health services, and more comprehensive treatment for the prevention of mother-to-child transmission of HIV (PMTCT). Measures to improve health outcomes for HIV-positive mothers include expanded access to postnatal care including antiretroviral (ARV) prophylaxis, immunizations, and micro nutrient supplements. Standard ART typically consists of the combination of at least three ARV drugs to maximally suppress the HIV virus and stop the progression of HIV disease.

One approach to achieving marked reductions in maternal mortality related to HIV is the revision of treatment guidelines for HIV-positive pregnant women. In 2006, the World Health Organization (WHO) recommended that ARVs be provided to HIV-positive pregnant women in the third trimester (beginning at 28 weeks) for PMTCT. At that time, evidence demonstrating the protective effect of ARVs during breastfeeding was insufficient. In 2009, the WHO revised its treatment PMTCT guidelines to promote ARV use in pregnant women starting at 14 weeks and continuing through the end of the breastfeeding period with the goal of reducing MTCT and ensuring increased maternal and child survival. Since then, several clinical trials have shown the efficacy of ARVs in preventing transmission to the infant while breastfeeding. The two main revisions to the WHO’s PMTCT treatment guidelines are:
• **Lifelong ART** for HIV-positive women to maintain their health – a therapy which is also safe and effective in reducing MTCT.

• **ARV prophylaxis** to prevent MTCT during pregnancy, delivery, and breastfeeding for HIV-positive women not in need of treatment.

These are significant changes since revised guidelines propose an earlier initiation of ART for HIV infected pregnant women in order to improve their health and prevent MTCT during pregnancy, delivery, and breastfeeding. This modification of treatment to introduce ARV therapy early for HIV-positive pregnant women will include many women who may not have initially qualified for ART. Revised guidelines will also increase the numbers of women who qualify for HIV treatment and represent a major shift towards more effective and safer interventions to prevent pregnancy complications and HIV transmission during pregnancy, labor and delivery, and the postpartum and breastfeeding periods. Primary PMTCT prevention through increased access to ARVs can reduce vertical transmission by increasing the proportion of HIV-positive women who are provided with comprehensive treatment earlier and for longer periods of time.
Introduction

Since its independence from South Africa in 1990, Namibia has developed politically and socially into a middle-income country. Namibia’s successes rest on sound economic management, good governance, basic civic freedoms, and respect for human rights, and the country has made significant progress in addressing many development challenges. Its citizens now enjoy access to basic education, primary health care services, and safe water. Namibia maintains a social safety net for the elderly, disabled, orphans, vulnerable children, and war veterans, and has enacted a Social Security Act that provides for maternity leave, sick leave, and medical benefits.

Despite the above mentioned advances, 62 percent of individuals earning less than $2.00 per day and poverty is rampant in both rural and urban areas [67]. Wide disparities in wealth and access to resources exist among Namibia’s population of approximately 2,100,000. In 2010, the infant mortality rate was 29 per 1,000 live births [4]. Namibian women are having fewer children but childbearing often starts early. The total fertility rate (TFR) is the number of children a woman is likely to have by the end of her child bearing years according to age-specific fertility rates observed in a given year. Namibia’s TFR has declined significantly from 1970 levels of 6.5 children per woman to 5.2 in 1990 and 3.2 in 2010. TFR variances between rural and urban populations have also differed with TFR in both the 2000 and 2010 showing TFR ranging from 5.1 in rural areas compared with 3.1 in urban areas [55]. According to the WHO, 2010 estimates of life expectancy in Namibia was 62 for women and 53 for men which is a decline from 1991 estimates and may be attributed to the HIV/AIDS epidemic. In 2008, Namibia’s HIV prevalence rate was estimated at 17.8 percent among adults ages 15 to 49, which is a decrease from 2006 estimates of 19.9 percent. Recent health surveys indicate that HIV prevalence is highest (27
percent) among adults aged 30-34 years and much lower (5.1 percent) among women aged 15–19 years [41]. There is a wide differential in life expectancy between the various regions, as well as between rural and urban areas. After independence, the Namibian government adopted policies and programs to increase access to basic services and improve the health, social, and economic well-being of its citizens. A national health policy was also adopted based on universal access to health and social services.

In Namibia, it is the Ministry of Health and Social Services (MoHSS) policy to charge user fees for all services except preventive services such as antenatal care (ANC), PMTCT, HIV counseling and testing (HCT), postnatal care, family planning (FP), and immunizations [51]. In 2002, the WHO estimated that the Namibian government expended 12.9 percent of its annual budget or a per capita expenditure of $99 [66]. This amount of public spending on health is still below the 15 percent required by the Abuja Declaration and government health-related expenditures have decreased as a percentage of the overall national budget from 12.7 percent in 2002/03 to 11.3 percent in 2006/07 [1].

In 2004, the total number of physicians in Namibia was 589 or 0.3 per 1,000 population and nurses/midwives were estimated at 6,145 or 3.06 per 1,000 population. These ratios are positive when compared to sub-Saharan Africa as a whole, which averages 0.2 physicians per 1,000 population and 1.172 nurses/midwives per 1,000 population. However, HIV prevalence in Namibia exceeds 15 percent among adults aged 15-49, which is high when compared to the sub-Saharan African average of 7.1 percent. These numbers do not accurately show the situation on the ground where private health care facilities are often adequately staffed while staff shortages often remain in public sector facilities. The high numbers of adults with HIV, and high
prevalence of infections such as malaria and tuberculosis, maternal mortality, child malnutrition coupled with the need for expanded preventative services i.e. FP, obstetric care, and childhood immunization strain an overburdened health system that has too few or inadequately trained health workers. Health workers are often inefficiently distributed so they may not be working in the areas where they are most needed [5].

Namibia's health system is organizationally complex with the MoHSS overseeing a system that includes both facilities and community based health programs. The 2006/07 Namibia Demographic Health Survey (NDHS) found that public health services are provided through a system of 30 public district hospitals, 44 health centers, and 265 clinics. One national referral and three intermediate hospitals provide support to the district hospitals. Outreach points provide basic outreach and act as lower tier health delivery sites due to the vastness of the country, population distribution, and lack of access to permanent health facilities in many communities.

Public sector facilities include hospitals, clinics, and health centers owned and operated by the government as well as facilities owned and operated by religious groups but funded by the government. Namibia also has private health facilities including hospitals, pharmacies, surgical centers and nursing homes that serve approximately 15 percent of the population and are mainly located in urban areas [6].

The WHO estimates that Namibia has approximately 27 hospital beds for every 100,000 population [61]. Rural households are more likely to be located nearest to a clinic than urban households (74 percent and 61 percent, respectively) as well as a health center (9 percent and 4 percent, respectively). On the other hand, urban households are more likely than rural households to be near a government hospital (28 percent and 16 percent, respectively) [6].
WHO estimates that public health care facilities serve 85 percent of the Namibian population and are mostly accessed by lower income groups. The private health sector serves the remaining 15 percent of the population, which is made up of middle and high income groups. Despite the apparent large number of health facilities available to the Namibian population, access to health care is still a concern for most Namibians due to remoteness and long distances needed to reach a health facility.

According to the 2006/07 NDHS, one in five households is within 15 minutes of a government health facility and three in five are within one hour of a health facility. However, significant differences in access exist between urban and rural households. The latter are 114 minutes away from the nearest government health facility, whilst the former are 25 minutes away. Additionally, maternal health services are not consistently available throughout Namibia. Nationally, 79 percent of health care facilities (public health centers and clinics) provide ANC with only 18 percent of hospitals providing these services. Normal delivery services are available in two-thirds, or 67 percent, of facilities, while 71 percent of facilities offer postnatal care. Four-fifths of all facilities do have a system in place to provide transport to a referral site for maternity emergencies, but only 9 percent of facilities nationwide can perform a Caesarean section [51].

HIV/AIDS remains a serious public health concern for Namibian women and children. Despite its relatively small population of approximately 2,000,000 people, HIV prevalence among Namibians aged 15-49 years is estimated at more than 18 percent. In 1990s, the Namibian MoHSS in conjunction with local NGOs, donors, and agencies formed the National AIDS Control Program (NACP) and expanded the program in 1999 to form the National AIDS Coordination Program (NACOP). This national program coordinates HIV prevention and treatment efforts in
Namibia. All government health facilities (hospitals, health centers, and clinics) distribute condoms free of charge, but behavioral patterns such as higher risk sex, multiple and concurrent sexual partners, partner violence, and alcohol use remain serious obstacles to improved maternal health in Namibia.

Namibian government health facilities offer provider-initiated testing and counseling (PITC) as well as voluntary counseling and testing (VCT) and treatment referral services. Generally, PITC is provided in health facilities to increase the number of people who receive VCT, and to identify those in need of care and treatment. VCT is typically provided in community-based stand-alone sites, in outreach as well as health facilities. PITC involves the health care provider specifically recommending an HIV test to patients attending health facilities. Under these circumstances, once specific pre-test information has been obtained, the HIV test would ordinarily be performed unless the patient declines. HCT is generally offered for two purposes—first, as a prevention strategy for people who want to know their HIV status and, second, as an entry point for treatment, care, and support. PITC is provided in health facilities and VCT is provided in community-based stand-alone sites and outreach posts, as well as in health facilities. As of 2009, two-thirds of the countries in sub-Saharan Africa, Latin America, and the Caribbean have developed HIV testing and counseling policies or guidelines incorporating PITC.

Since 2002, services have been rolled out to all 34 public hospitals and 206 health facilities and clinics. By the end of 2006, all 34 hospitals, state and faith-based organizations, about 178 health facilities, were providing PMTCT services; and about 859 health workers were trained in the provision of such services. About 68,800 pregnant women had been seen at PMTCT sites as of March 2006. About 88 percent of pre-test counseled women took the HIV test, and the HIV
prevalence rate among tested women was recorded as 17 percent [6]. By 2007, 256 of the 335 health facilities in Namibia had ANC services. Of these 256, 74 percent (189 facilities) were providing PMTCT services. This translates to a coverage level of 56 percent of all health facilities in Namibia in 2007. PMTCT, when integrated into ANC services, makes obtaining PMTCT easier and more accessible for pregnant women already attending ANC services. Additionally, the ‘opt-out’ testing strategies which routinely test all pregnant women for HIV unless a patient explicitly refuses the test has accelerated the uptake of PMTCT services.

The MoHSS adopted opt-out testing for pregnant women in 2002 as a pilot program and expanded to all district hospitals in 2006 [55]. Namibia’s 2006-07 Country Report to the UN officially listed its rapid testing as an option for PITC in PMTCT, ANC, and TB settings with the provision for non-laboratory personnel, including community counselors, to perform rapid testing [56]. As a result of the adoption of PITC, ‘opt-out’ policies, and the use of rapid HIV testing with same day results, more than 90 percent of all ANC attendees are tested for and counseled on HIV and PMTCT. Of these women, nearly 90 percent receive ART to reduce the risk of transmitting the virus to their infants (2010 ANC Sentinel Surveillance Report).

As of 2011, care and support services for HIV/AIDS clients are available in nine of every 10 facilities. On average, seven of every 10 facilities offer primary preventive treatment for opportunistic infections, such as cotrimoxazole preventive treatment. On average, 18 percent of all facilities provide ART services, including seven of every 10 hospitals and a little over one-third of health centers. Tools and strategies for ART services, such as national and other clinical management guidelines for ART, are widely available in facilities. PMTCT services are available in three-quarters of all facilities, including eight of every 10 hospitals and nine of every 10 health
centers, however only half of facilities reporting that they offer PMTCT actually offer all five components of the minimum PMTCT package. This package includes: counseling and testing for pregnant women, short-course preventive ARV for PMTCT, counseling and support for safe infant feeding practices, FP counseling or referral, and referral for long-term ART for children born to HIV-positive mothers. Nine out of every 10 ANC facilities report offering PMTCT services [7].

In Namibia, the 2006/07 NHDS indicated that 32 percent of men and 50 percent of women have tested and know their HIV status. Among people aged 15-49 years, only 31.3 percent of women and 12.9 percent of men have tested and received their results in the past 12 months and received their results [10]. Despite these efforts, Namibia has made insufficient progress towards achieving MDG 5 and MDG 6. According to the World Bank, HIV prevalence in Namibia has increased from four percent in 1990 to 20 percent in 2006 among adults aged 15-49 years [8]. In 2007, the total number of women living with HIV who received ARVs to prevent MTCT was 6,022 and HIV-positive pregnant women needing ARVs to prevent MTCT was approximately 9,400 [9]. In March 2002, the Namibian Government introduced PMTCT services as a pilot project at two state hospitals—Oshakati Hospital in the north and Katutura State Hospital in the capital of Windhoek.

**Literature/Evidence Review**

The steady rise in maternal mortality in recent years still poses a major challenge for the Namibian health system. The five main preventable causes of maternal mortality are hemorrhage, sepsis, unsafe abortion, hypertensive disorders, and obstructed labor. Globally,
more than 80 percent of maternal deaths are attributed to these five causes and all can be effectively treated at well-staffed, well-equipped health facilities with adequately trained staff [63]. In Namibia, maternal mortality is still predominately caused by the low coverage of emergency obstetric care services (EmOC) as it relates to MM and HIV/AIDS. EmOC is specific care used to save the life of a pregnant woman or her unborn child and includes administration of antibiotics, oxytocic, or anticonvulsants for pre-eclampsia or eclampsia for the mother, manual removal of placenta or retained placenta, assisted vaginal delivery, surgery or blood transfusions [65].

Lackluster progress has also been made to reduce infant and under-five mortality rates. Since 2000, consistent with the 2006/07 NDHS, the infant mortality rate increased from 38 in 2000 to 46 deaths per 1,000 live births in 2006/07. Similarly, under-five mortality rose from 62 in 2000 to 69 deaths per 1,000 live births. The main causes of infant mortality in Namibia remain HIV/AIDS, inadequate nutrition, and insufficient coverage of immunization services [1].

The first HIV-infected patient in Namibia was diagnosed in 1986. Since then, the total number of HIV infections has grown from 160,000 in 2001 to an estimated 180,000 in 2009 [52]. Today, transmission is primarily through heterosexual contact with 2008/09 prevalence estimates of 13.3 percent among the general population (ages 15-49 years). Main risk factors for HIV in Namibia include multiple concurrent partnerships, inconsistent condom use, low risk perception despite high HIV awareness, low levels of male circumcision, high levels of transactional sex, and migration [11]. In addition, specific social and gender norms such as inter-generational sex, alcohol abuse, and gender-based violence conflate the risks faced by vulnerable populations.
Sentinel surveillance data from ANC sites suggests that HIV prevalence among pregnant women has dropped to 17.8 percent in 2008, from a peak of 22 percent in 2002 [53]. AIDS-related deaths account for approximately 23 percent of all deaths in Namibia (crude death rate from population projections for 2008-09). In 2008/09 approximately 5,830 people were newly infected with HIV—an average of 16 new infections per day [4]. As stated by the Joint United Nations Program on HIV/AIDS (UNAIDS), the average number of AIDS related deaths among adults aged 15-49 in Namibia have decreased from approximately 8,500 in 2002 to 3,900 in 2010 [57].

With HIV prevalence still a significant issue among pregnant women in Namibia, improving maternal health outcomes during pregnancy, delivery, and the postnatal period is a sure way to address HIV infections, transmission, treatment and care. Actively championing care throughout a woman’s care including PMTCT, early introduction of ARVs, and delivery in a health facility will prevent and treat the common causes of maternal mortality. In line with the 2006/07 NDHS, about 80 percent of live births in Namibia in the five years preceding the survey took place in a health facility. Even though 95 percent of pregnant women receive ANC from a skilled provider and an additional 70 percent received four or more ANC visits, most women sought care well after the first trimester of pregnancy. The majority of women (81 percent) did go to health care facilities to give birth but 11 percent of births are assisted by a relative or other untrained provider [12].

MTCT programs were first introduced in 1990 through the United Nations inter-agency MTCT Program and numbered nearly 80 programs in 16 countries by 2001. In 1999, an Inter-
Agency Task Team on PMTCT (IATT) initially comprised of UNAIDS, WHO, UNICEF, and UNFPA provided leadership and guidance on PMTCT as part of a broader strategy to prevent the transmission of HIV, care for HIV-positive women and their families, and promote maternal and child health. The MTCT-Plus Initiative was started in 2001 as a response to UN Secretary General Kofi Annan’s “Call to Action” to increase access to HIV/AIDS care and treatment in resource-poor settings [13]. The WHO and UNICEF, in collaboration with global partners, have also developed the *Guidance for Global Scale-up of the Prevention of Mother-to-Child Transmission of HIV* to provide timely support to countries to accelerate scaling-up of national PMTCT programs. The Guidance promotes the integration of PMTCT and links with maternal, newborn and child health, ART, FP, and sexually transmitted infection services [64].

Preventing new HIV infections among pregnant women through increased ARV use during pregnancy appears to be a very effective and long-term solution in the push to prevent new HIV infections. Successful strategies need to include comprehensive, multi-faceted, and complex prevention interventions that address prevailing norms. Additionally, government policies which target increased access to HIV care, treatment, and prevention services also need to address and meet the needs of people who face elevated risk exposure. Behavior change is required at the individual, community, and national levels. All of these changes can be encouraged by creating a policy and health care environment that enables individuals to make safer choices, have access to care, and sustain healthy behaviors without stigma and financial burden.
Program Review

The Namibia Capacity Building for Country Owned HIV/AIDS Services project (hereafter referred to as the project) is a five year project implemented by IntraHealth International and funded by the United States Agency for International Development (USAID) with the goal of building the capacity of indigenous organizations to implement HIV programs, and improve access to high quality HIV prevention, care, support, and treatment services. The project aims to increase emphasis on capacity building, quality, and country ownership, reflecting greater alignment with the Government of the Republic of Namibia and the US Government priorities for improving HIV service delivery, care, and support. The project aims specifically to focus technical assistance on systematic capacity building of Namibian faith-based organizations (FBOs) including the Anglican Medical Services (AMS), Lifeline/Childline (LL/CL), Catholic Health Services (CHS), and Lutheran Medical Services (LMS), as well as the MoHSS, the HIV Clinician’s Society, and the Nursing Council of Namibia to sustain comprehensive HIV programs aligned with Namibia’s National Strategic Framework (NFS) for HIV AIDS 2010/11 – 2015/16. Faith based organizations and their health facilities are integral to the fight against HIV/AIDS in Namibia. FBO hospitals and clinics are an integral part of Namibia’s public health care system and service more than 25 percent of the Namibian population’s health care needs.

In order to achieve this goal by 2014, the project is focusing on capacity building and country ownership. Strengthened capacity of Namibian FBOs and NGOs will assist in the delivery of high quality, comprehensive HIV prevention, care, and treatment services with emphasis on maternal, neonatal, and child health (MNCH). The project collaborates with AMS, CHS, and LMS to ensure gains are sustained in the implementation of comprehensive, robust HIV programs to
improve 1) MNCH service delivery through integration of existing services, 2) support implementation of the National Road Map, and 3) ensure partners collaborate closely with the MoHSS regional management teams. The project is strengthening partner capacity to routinely utilize clinical data for assuring and improving the quality of service delivery in HIV, MNCH, and other programs. Increased technical, management, and financial capacity of Namibian FBOs and NGOs will better sustain the government’s response to the HIV epidemic.

Consistent with the MoHSS agenda to eliminate MCTC of HIV, the project implements a four-pronged approach to PMTCT with an enhanced focus on primary prevention of HIV infection among women of reproductive age; prevention of unintended pregnancies through provision of FP; prevention of HIV transmission from HIV-positive women to their infants; and provision of appropriate treatment, care, and support to mothers living with HIV and their children and families. Ongoing data collection and project reporting cover multiple variables and populations affected by, or at risk for, HIV infection. The overall project goal is to analyze influencing factors to determine what types of services need to be implemented to increase the access and reduce barriers to care, not only by HIV-positive pregnant women but all populations at risk of HIV in Namibia.

Information from data gathered over the life of the project will inform the programmatic decision-making of providers, facilities, the project, USAID, and the MoHSS. Data collected and analyzed covers the types of services available in facilities, specific populations targeted for care, type and duration of treatments, and targeted provider training to increase access to HIV prevention, treatment, and care. Data are collected on multiple indicators (Appendix A) in all six faith-based health facilities as well as free-standing VCT centers. Intake forms are paper-based
but are entered into a corresponding web-based information system. PMTCT specific data are
collected through ANC, delivery and postnatal registers completed by service providers and
submitted to the project on a monthly basis through an Epi Info-based system.

Since 2006, the project has supported the Government of Namibia to reduce the spread and
impact of HIV by building local capacity. Currently, the project has direct sub-awards with nine
local organizations supported by USAID Namibia through the President’s Emergency Plan for
AIDS Relief (PEPFAR), and supports the activities of the HIV Clinician Society and The
Pharmaceutical Society of Namibia. Since 2008, the Namibian MoHSS has sought to collaborate
with non-governmental organizations (NGO) to develop and apply a more technical approach to
increase its response to HIV/AIDS. Using the NSF for HIV and AIDS Response in Namibia along
with the National Operational Plan (NOP), Regional Operational Plans (ROPs), and Sector
Operational Plans (SOPs) which are aligned to the NSF, the government has repositioned
HIV/AIDS services within a broader primary health care context, integration of HIV and maternal,
newborn, and child health (MNCH) services, and transferred full leadership and accountability
for planning, delivering, and assuring the quality of health services to Namibian partners. The
project utilizes the National Strategy’s recommendations for implementation to assist the
MoHSS to shift focus from service delivery to greater understanding of how service delivery
efforts impact the epidemic itself.

In order to better assist the MoHSS, the project has developed three interrelated technical
strategies. These include: 1) clinical excellence through evidence-based service delivery,
mentoring and supportive supervision, and utilization of data to improve performance; 2)
extension of access to services through increased community referrals and HIV integration with
other critical MNCH services; and 3) promotion of organizational leadership and management through human resources strengthening, using data for decision making, forming partnerships with the private sector, and financial accountability. The project provides targeted technical support in HIV clinical services and capacity building in 10 out of 13 regions through direct implementation and collaboration with the local partners, the Namibian government, regional stakeholders, private providers and other USG implementing partners. The program works to aggressively support ART, offer palliative care, rollout counseling and testing services, and scale-up HIV prevention and behavior change messaging. The project has also assisted the MoHSS to deploy an information system that provides human resource and health care managers with timely, thorough, and accurate data for decision making.

**Location**

When collecting data, the project has taken into consideration the reporting needs of the Namibian Government, USAID, and PEPFAR when data collection is conducted by providers and project staff. Indicators (Appendix B) have been developed in coordination with project staff, USAID, and host government input. Since 2008, the project and MoHSS have collaborated to reduce maternal mortality through technical assistance.
assistance in EmOC, PMTCT in antenatal clinics, labor and delivery wards, and surrounding communities of faith-based facilities (five out of 33 national hospitals and one health center) in 10 of the 13 regions of Namibia. By the end of 2011, the project has supported PMTCT services in 56 health facilities in and around mission facilities. These sites include the six faith-based facilities cited above plus 50 other public facilities in surrounding communities that fall under partner organization management. This level of coverage leaves only seven facilities targeted by the project not yet offering PMTCT.

**Population**

Targeted data are being collected in project supported facilities on 1) pregnant women with known HIV status, 2) People Living with HIV (PLHIV), 3) individuals participating in preventive interventions, 4) individuals reached through community outreach that promotes HIV/AIDS prevention through other behavior change beyond abstinence and/or being faithful, 5) individuals who received testing and counseling at public and faith-based health facilities, 6) infants born to HIV-positive mothers less than 12 months of age, and 7) children eligible for HIV services (the WHO recommends universal ARV treatment for children <2 years born to HIV-positive mothers regardless of CD4 count or clinical data. For children >2, CD4 or clinical data are recommended. For the project’s purposes, facilities are defined as health clinics, health centers, district and intermediate hospitals established and funded by the government, and private health clinics established and funded by FBOs. Depending on the level in the health system, health clinics are staffed by a midwife, nurse, doctor, or combination of the three.
Techniques

Under the project, PMTCT is aimed at reducing the HIV incidence related to vertical transmission by increasing the proportion of HIV-positive women and their exposed babies provided with ARV prophylaxis. Ensuring availability of ARV drugs to mothers and their newborns, safe childbirth, infant feeding counseling, FP counseling/referral and continuity of care are the key components of project-supported PMTCT programs in facilities. These interventions are accessed through antenatal clinics and labor and delivery wards in six mission facilities (five faith-based hospitals and one health center). Health facility-based information systems for PMTCT track a wide range of data on patients receiving care at faith-based partner facilities. In general, patients receiving services have information collected on paper-based passport and registers. The data are then entered into health information systems from which monthly reports are being produced. Each month, reports are generated by health facility staff, aggregating individual patient data on key indicators and stratified according to the disaggregation, including gender and age. Monthly data are sent to the project, which aggregates this information quarterly.

Data Collection Systems

The project is responsible for monitoring and evaluating the program, including the local partners’ activities, and routinely records data through data collection tools such as patient registers, monthly health information system (HIS) reports, quarterly data reports, and quarterly performance benchmark reports on the services provided. Data are collected from clients/patients on a daily basis and then collated onto the monthly summary form. The monthly summary form or dataset is submitted to Project Managers, the MoHSS, and other relevant
partners. The project collates data received from partner organizations, analyzes and uses the data for reporting, completes the quarterly template and narrative, and submits these forms to USAID. Electronic reports are disseminated on a regular basis via feedback and planning workshops.

**Reporting Procedures**

The reporting framework for performance monitoring utilizes existing data flow for facility-based reporting through district and regional teams, as well as national offices for the partner organizations. The existing MoHSS HIV Information System collects monthly information on relevant indicators as required by partner organizations. Information collected and collated from all partner organizations, program reviews, evaluations, and other consultative exercises are compiled into reports and other information products for sharing, dissemination, and documentation. Partner organizations submit monthly reports and data to the project by the 5th of every month and the quarterly report by the 10th of the month following the end of the quarter; therefore facilities/sites submit their reports and data to their head offices in advance of these deadlines. On the 5th of every month, the project M&E officer reviews reports with partners to ensure timeliness, completeness, accuracy, reliability, and validity of reports. Problems encountered are discussed via telephone and/or email. Reports are submitted to the technical director within ten days of receipt for further review and analysis.

**Results**

In Namibia, PMTCT was first introduced in 2005 as part of the MoHSS national roll-out to health centers and clinics. PMTCT programs were strengthened through USAID-supported
projects, which have helped to recruit and train nurses, medical doctors, community health workers, and counselors to carry out routine HCT for all pregnant women coming to health clinics for prenatal care and delivery as well as those mothers who deliver with unknown status. Both HIV-positive mothers and their newborns are now routinely offered ARV prophylaxis according to national guidelines in addition to counseling and support for maternal nutrition, safe infant feeding, FP counseling and referrals, and ANC routine services.

**PMTCT:** The project supports faith-based partners to offer and strengthen quality PMTCT services at district hospitals, gradually extending professional care providers into the community for follow-up care of HIV-positive women, babies, and children at 48 satellite facilities. The project has exceeded its overall target for the number of pregnant women with known HIV status (includes women who were tested for HIV and received their results) in each of the four preceding project years (2008-2012). This is partly due to the national increase in the number of HIV testing sites with rapid testing capabilities, which reached 275 out of a total of 343 facilities or a coverage rate of 80 percent for 2010/2011 [57]. As a result of the increased number of facilities which can offer rapid testing, more women are counseled, tested, and receive their results on the same day. The project also exceeded targets for the number of HIV-positive pregnant women who received ARVs to reduce risk of MTCT. During 2008/09, a total of 1,728 HIV-positive women delivered in project supported facilities, of which 292 (or 17 percent) received ART, and 1,347 (or 78 percent) received ARVs. The project is working to integrate FP, gender, and HIV services by offering referrals, couples counseling and testing, and access to legal, psychosocial, and income-generating agencies for HIV-positive women.
**ART:** The project is currently supporting local partners to provide 16,120 HIV-positive persons with ART. A total of 3,230 patients began ART in 2008/2009, and a 77 percent continuation rate for all patients initiating ART is a result of rigorous adherence counseling, support group activities and active defaulter tracing. The project continues to support decentralization of services to satellite health facilities for clinically stable patients via integrated management of adult and adolescent illnesses (IMAI) by task-shifting appropriate HIV/AIDS procedures to lower-level cadres.

**Brief Motivational Intervention (BMI):** Alcohol abuse is widely viewed as one of the main drivers of the HIV epidemic in Namibia. WHO data from 2003 to 2005 showed that annual alcohol consumption in Namibia per capita was 9.6 liters, well over the average consumption in Africa (6.2 liters) [60]. Drinking alcohol has been shown to lower condom use and encourage earlier sexual debut as well as putting partners at higher risk for multiple concurrent partners, casual partners, and more at-risk partners. Additionally, informal establishments which sell alcohol often double as locations to have sex.

The BMI approach involves screening for alcohol use and assesses the willingness of the client to address drinking behavior. Using BMI skills, PMTCT counselors have a platform to enter into an in-depth dialogue with mothers where women are respected, acknowledged, appreciated, and given freedom to make an informed choice. Mothers are also able to tell their own stories and express their feelings in a safe and judgment-free environment. A key component of BMI is the development of an alcohol reduction plan for those showing interest in changing behavior. The project conducts quarterly supervisory visits to each site, which enables continuous assessment of, and support to, each facility. In addition, project staff organizes semi-annual performance
reviews where partners share achievements, identify lessons learned and best practices, and discuss challenges.

**HIV Counseling and Testing:** Project-supported HCT program has successfully scaled up outreach testing services in conjunction with the MoHSS. During 2009, a total of 75,320 individuals and 7,311 couples were tested and counseled (89 percent first-time testers). The project prevention team conducted a series of trainings with community mobilizers to increase uptake at VCT centers, which resulted in an increase in outreach testing events, community mobilization, and the number of people tested. Performance support and quality improvement visits are conducted quarterly with 18 community mobilizers and site managers with emphasis placed on the community mobilizers’ role as the forerunners for all outreach/mobile HCT. PITC is an opportunity to normalize HIV testing by making it routine; collaborations with the MoHSS/National Health Training Center to conduct PITC trainings targeting all health care providers and counselors providing services in health facilities are a way to make HIV testing an essential component of the diagnostic process. Finalization of the national HCT guidelines is another way to ensure that patients with sexually transmitted infections (STIs), FP clients, pregnant women, and adult inpatients and their families will be prioritized to receive PICT. To date, between 95 and 100 percent of all STI, and ANC clients offered PITC accept testing.
Discussion/Recommendations

In 2000, the WHO issued revised recommendations on the use of ARVs for PMTCT. These revisions expanded successful ART programs by simplifying and standardizing treatment regimens during pregnancy. These programs focused on primary prevention of HIV infection among women and their partners; prevention of unintended pregnancies among HIV-infected women; prevention of HIV transmission from HIV-infected women to their children; and the provision of treatment, care, and support for women living with HIV/AIDS, their children, and families [14]. Through these programs, HIV-positive pregnant women have greater access to ARV drugs which treat their HIV infection and prevent HIV transmission to their infants. Early ARV treatment benefits not only the health of HIV-positive pregnant women but also substantially reduces the risk of MTCT.

Namibia, like most sub-Saharan African countries, is dealing with multiple health issues including HIV infection, health care worker shortages, maternal, infant and child mortality, and child malnutrition. With MMR currently at 449 deaths per 1,000 live births in Namibia and HIV prevalence around 18 percent among women of reproductive age, health care workers, women, government, and communities need to better understand and address the interrelated nature of HIV and maternal mortality [12]. Early ARV treatment for all women who are HIV-positive regardless of their current HIV condition could improve the health status of pregnant HIV-positive women.

The good news is that Namibia has been able to reverse its high MMR through the introduction of ARVs for HIV-positive pregnant women. The country’s commitment and efforts
to reach MDG 5 are starting to pay off, but bold commitment is still needed to reduce maternal mortality by three-quarters by 2015. Namibia has made strides to address maternal mortality through its Vision 2030 and National Development Plans, which focus the Government of Namibia commitment to the overall health of its people and particularly maternal health. Practical guidelines such as the Roadmap to Maternal, Newborn, and Child Health support the implementation of policies which aim to directly improve maternal and child health throughout the country.

ANC is an important first point of contact for providers to reach pregnant women and counsel them about HIV risks, testing, treatment, and care. On average pregnant women attend their first visit in the second or third trimester and overall utilization of postnatal care is low. Addressing insufficient coverage of basic emergency obstetric care facilities, especially in the northern regions of Namibia, could have a measurable impact on positive pregnancy outcomes and reductions of maternal mortality. Since most pregnant women in Namibia have at least four ANC visits in accordance with the WHO standards, and deliver in health facilities by skilled birth attendants (SBAs), the MoHSS could regain missed opportunities for HIV care and treatment during pregnancy. Appropriate strategies where missed opportunities could encourage uptake of HIV care and treatment are opt-out testing, coupling testing, and treatment of common pregnancy related complications such as anemia, vitamin A deficiency, and pre-eclampsia. Going forward, obstetric outcomes for HIV-positive women could be improved if particular attention is paid to areas where HIV and ANC access and coverage are low and mortality higher.

Despite an increase in the number of pregnant women who know their HIV status globally, and earlier initiation of ARVs for these women, decreases in maternal deaths are not being
observed. One approach to make a meaningful impact in the rate of maternal and child mortality is the strengthening of HIV services to ARV expansion for HIV-positive pregnant women. This will provide an opportunity for the Namibian health system to alter the HIV epidemic trajectory, and reduce maternal and child deaths related to HIV infection. Specifically, the Namibian Government could ensure that the national health system has the resources and staffs to make sure all HIV pregnant women who need ARV treatment for their own health receive it in accordance with the WHO guidelines. The use of ARV treatment during pregnancy, when indicated, substantially benefits the health of the woman and decreases the risk of HIV transmission to the infant.

Additionally, HIV-positive pregnant women who do not have indications for ARV treatment, or do not have access to treatment, should be offered ARV prophylaxis for PMTCT using approved ARV regimens. Through expanded access to PMTCT programs, the Namibian government and health care system could ensure that all eligible HIV-positive pregnant women have access to ARV treatment. Decisions relating to ARV treatment for pregnant women should be based on their need and eligibility and not rely on access or economic considerations since ARV drugs should be taken in the first trimester of pregnancy, before a woman is typically aware that she is pregnant, in order to prevent PMTCT [16]. Several approaches which could address and reduce barriers to expanded ARV treatment include:

- Greater integration of PMTCT services into other programs, such as immunizations and FP, could reduce a woman’s fear of discrimination and stigma due to her HIV status when accessing PMTCT services.
• Increase education on WHO-recommended infant feeding practices to address the low adherence to breastfeeding which endorses either full breastfeeding for the first 4-6 months and rapid weaning, or full artificial feeding.

• Increase support to women who deliver at home through more community outreach and education to increase the uptake of ARVs for HIV prevention since many women attend antenatal clinics for care during pregnancy but do not deliver in health facilities.

• Increase family and community involvement in the design and tailoring of PMTCT service delivery options to help normalize and increase use of HIV counseling, testing, treatment, and care.

• Increase national, regional and local political commitment and leadership to make PMTCT a foundation service of the ANC care package.

For countries with high HIV prevalence, such as Namibia, HIV has become a leading cause of death for women during pregnancy and the postpartum period. Despite an initial increase in maternal mortality in Southern Africa between 1990 and 2005, there is evidence that declines noted between 2005 and 2010 are due to increased access and treatment of HIV-positive women using ARVs during pregnancy. The increased use of ART by HIV-positive women in sub-Saharan Africa, from <10 percent in 2000 to 55 percent in 2010, has reduced maternal mortality due to HIV [3, 13]. In September 2010, the UN Secretary-General launched the Global Strategy for Women’s and Children’s Health to mobilize commitments by governments, civil society organizations and development partnerships to accelerate progress toward achieving MDGs related to maternal mortality.
Key strategies countries could implement as part of HIV prevention, care, and treatment programs to improve maternal health and reduce maternal mortality could include 1) support for country-led health plans funded by increased, predictable, and sustainable investment; 2) integrated delivery of health services and life-saving interventions so that women can access prevention, treatment and care; 4) stronger health systems with sufficient skilled health workers; 5) health workforce capacity to deal with increased disease burden, care, and treatment; and 6) innovative approaches to financing, product development, and efficient health service delivery [17]. Applying these strategies to all aspects of maternal health would provide a greater impact on the causes of maternal mortality including those related to HIV while helping to improve national scale-up of best practices. Removing barriers to needed prevention, care and treatment will ensure that women in Namibia, and around the globe, receive comprehensive health care by skilled providers when and where they need it.
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## Appendix A: Millennium Development Goals 5 and 6

<table>
<thead>
<tr>
<th>Goals and Targets (from the Millennium Declaration)</th>
<th>Indicators for monitoring progress</th>
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<tbody>
<tr>
<td><strong>Goal 5: Improve maternal health</strong></td>
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</table>
| **Target 5.A:** Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio | 5.1 Maternal mortality ratio  
5.2 Proportion of births attended by skilled health personnel |
| **Target 5.B:** Achieve, by 2015, universal access to reproductive health | 5.3 Contraceptive prevalence rate  
5.4 Adolescent birth rate  
5.5 ANC coverage (at least one visit and at least four visits)  
5.6 Unmet need for FP |
| **Goal 6: Combat HIV/AIDS, malaria and other diseases** |                                   |
| **Target 6.A:** Have halted by 2015 and begun to reverse the spread of HIV/AIDS | 6.1 HIV prevalence among population aged 15-24 years  
6.2 Condom use at last high-risk sex  
6.3 Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS  
6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years |
| **Target 6.B:** Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it | 6.5 Proportion of population with advanced HIV infection with access to antiretroviral drugs |
| **Target 6.C:** Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases | 6.6 Incidence and death rates associated with malaria  
6.7 Proportion of children under 5 sleeping under insecticide-treated bed nets  
6.8 Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs  
6.9 Incidence, prevalence and death rates associated with tuberculosis  
6.10 Proportion of tuberculosis cases detected and cured under directly observed treatment short course |

### Appendix B: Project HIV Indicators

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Indicator</th>
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<tr>
<td><strong>PMTCT</strong></td>
<td>Number of pregnant women with known HIV status (includes women who were tested for HIV and received their results)</td>
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<tr>
<td></td>
<td>Number of HIV-positive pregnant women who received antiretroviral to reduce risk of mother-to-child-transmission</td>
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<td></td>
<td>Number of health facilities providing ANC services that provide both on-site HIV testing and ARVs for PMTCT</td>
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<td></td>
<td>Number of HIV-positive pregnant women assessed for ART eligibility through either clinical staging (using WHO clinical staging criteria) or CD4 testing</td>
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<tr>
<td></td>
<td>Number of HIV-positive pregnant women newly enrolled into HIV care and support services</td>
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<td></td>
<td>Number of health care workers who successfully completed an in-service training program in providing PMTCT services</td>
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<tr>
<td><strong>Post-Exposure Prophylaxis</strong></td>
<td>Number of persons provided with post-exposure prophylaxis (PEP)</td>
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<tr>
<td></td>
<td>Number of health care workers who successfully completed an in-service training program in Post-exposure prophylaxis</td>
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<tr>
<td><strong>Prevention with People Living with HIV (PwPLHIV)</strong></td>
<td>Number of PLHIV reached with a package of PLHIV (PwP) interventions that meet the minimum standards required</td>
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<tr>
<td></td>
<td>Number of health care workers who successfully completed an in-service training program in providing prevention with PLHIV</td>
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<tr>
<td><strong>Sexual and other Behavioral Risk Prevention</strong></td>
<td>Number of the targeted population reached with individual and/or small group level (&lt;25 people) preventive interventions that are based on evidence and/or meet the minimum standards required</td>
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<tr>
<td></td>
<td>Number of the targeted population reached with individual and/or small group level (&lt;25 people) preventive interventions that are primarily focused on abstinence and/or being faithful, and are based on evidence and/or meet the minimum standards required</td>
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<tr>
<td></td>
<td># of individuals reached through community outreach that promotes HIV/AIDS prevention through other behavior change beyond abstinence and/or being faithful (CM)</td>
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<td></td>
<td>Number of individuals who successfully completed an in-service training program in providing sexual &amp; behavioral risk prevention interventions</td>
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<tr>
<td><strong>Testing and Counseling</strong></td>
<td>Number of individuals who received Testing and Counseling (T&amp;C) services for HIV and received their test results</td>
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<td></td>
<td>Number of HCT outreach/mobile outlets established</td>
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<td></td>
<td>Number of individuals who successfully completed an in-service training program in testing &amp; counseling</td>
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<tr>
<td><strong>Umbrella Care</strong></td>
<td>Number of eligible adults and children provided with a minimum of one care</td>
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<tr>
<td>Service Area</td>
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<tr>
<td><strong>Clinical Care</strong></td>
<td>Number of HIV-positive adults and children receiving a minimum of one clinical service</td>
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<td></td>
<td>Number of HIV-positive persons receiving cotrimoxazole prophylaxis</td>
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<td>TB/HIV: % of HIV-positive patients who were screened for TB in HIV care or treatment settings</td>
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<td></td>
<td>TB/HIV: % of HIV-positive patients in HIV care or treatment (pre-ART or ART) who started TB treatment</td>
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<td></td>
<td>TB/HIV: Number of eligible HIV-positive patients starting Isoniazid Preventive Therapy (IPT)</td>
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<td></td>
<td>Number of health care workers who successfully completed an in-service training program IN CLINICAL CARE FOR PLHIV</td>
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<tr>
<td><strong>Pediatric Care</strong></td>
<td>% of infants born to HIV-positive women who received an HIV test within 12 months of birth</td>
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<td>% of infants born to HIV-positive pregnant women who are started on CTX prophylaxis within two months of birth</td>
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<tr>
<td><strong>Support Care</strong></td>
<td>Number of eligible adults and children provided with psychological, social, or spiritual support</td>
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<td>Number of individuals who successfully completed an in-service training program IN SUPPORT CARE FOR ADULTS</td>
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<tr>
<td><strong>Treatment</strong></td>
<td>Number of adults and children with advanced HIV infection newly enrolled on ART</td>
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<td></td>
<td>Number of adults and children with advanced HIV infection receiving ART</td>
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<td></td>
<td>% of adults and children known to be alive and on treatment 12 months after ART initiation</td>
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<tr>
<td></td>
<td>Number of adults and children with advanced HIV-infection who ever started on ART</td>
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<td></td>
<td>Number of public health facilities that offer ART</td>
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<tr>
<td></td>
<td>Number of health care workers who successfully completed an in-service training program IN PROVIDING ADULT ART</td>
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<tr>
<td></td>
<td>Number of health care workers who successfully completed an in-service training program IN PROVIDING ART TO PEDIATRICS</td>
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</tbody>
</table>

Source: IntraHealth International 2008