



Papua New Guinea Country Program

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ACRONYMS

ADB	Asian Development Bank	MDG	Millennium Development Goals
AIDS	Acquired Immune Deficiency Syndrome	MoU	Memorandum of Understanding
ANC	Antenatal Clinic	NAC	National AIDS Council
ART	Antiretroviral Treatment	NACS	National AIDS Council Secretariat
ARV	Antiretroviral	NCD	National Capital District
AusAID	Australian Agency for International Development	NDoH	National Department of Health
BAHA	Business Coalition against HIV and AIDS	NEC	National Executive Council
CHAI	Clinton Health Access Initiative	NEQAS	National Quality Assurance System
CHS	Catholic Health Services	NGO	Non-Governmental Organization
CPHL	Central Public Health Laboratory	NHS	National HIV Strategy
CSHOR	Center for HIV Operational Research	NZAID	New Zealand Agency for International Development
COS	Continuity of Service	O & G	Obstetrics & Gynaecology
DBS	Dried Blood Spot	OI	Opportunistic Infection
DNA	Deoxynucleic acid	OIC	Officer-in-Charge
DOTs	Directly Observed Therapy	PEPFAR	President's Emergency Plan for AIDS Relief
EHP	Eastern Highlands Province	PAC	Provincial AIDS Council
EID	Early Infant Diagnosis (of HIV)	PASHIP	PNG Australia Sexual Health Improvement Program
EIT	Early Infant Treatment (Anti-retroviral)	PCR	Polymerase Chain Reaction
EQAS	External Quality Assurance System	PHA	Provincial Health Authority
FHI	Family Health International	PIC	Pacific Island Country
FIFO	First In First Out	PICT	Provider Initiated Counselling and Testing
GFATM	Global Fund for AIDS, TB and Malaria	PLHIV	Person/People Living with HIV
GIPA	Greater Involvement of People Living with AIDS	PMGH	Port Moresby General Hospital
GoPNG	Government of Papua New Guinea	PNG	Papua New Guinea
HAART	Highly Active Anti-Retroviral Treatment	POC	Point of Care
HAMP	HIV/AIDS Management and Prevention Act	PPTCT	Prevention of Parent to Child Transmission
HCT	HIV Counselling and Testing	ProMEST	Provincial Monitoring Evaluation and Surveillance Team
HCW	Health Care Worker	PSI	Population Services International
HIV	Human Immunodeficiency Virus	QAI	Quality-at-Implementation
HSIP	Health Sector Improvement Program	RI	Rural Initiative
IRG	Independent Review Group	RUTF	Ready-to-Use Therapeutic Food
KRA	Key Result Area	SCM	Supply Chain Management
LMIS	Logistics Management Information System	SHP	Southern Highlands Province
LNG	Liquefied Natural Gas	SOP	Standard Operating Procedure
LTFU	Lost to follow-up / Loss to follow-up	STI	Sexually Transmitted Infection
MCH	Maternal and Child Health	TB	Tuberculosis
		UNICEF	United Nations Children's Fund
		USAID	United States Agency for International Development
		VCT	Voluntary Counselling and Testing
		WHO	World Health Organization
		WHP	Western Highlands Province

EXECUTIVE SUMMARY

Papua New Guinea (PNG) has the most serious and fastest growing HIV epidemic in the Pacific; in 2008 PNG accounted for over 98 percent of all new HIV infections in the Asia-Pacific region. HIV incidence is increasing amongst PNG's rural majority, which constitutes eighty-seven percent of the total population. According to the most recent national estimation report, there are 34,100 people currently living with HIV and 3,200 people were newly infected in 2009. One thousand three hundred (1,300) people died because of HIV-related illnesses in 2009. In the era of antiretroviral therapy (ART), these are preventable deaths.

The Clinton Health Access Initiative (CHAI) – formerly known as Clinton HIV/AIDS Initiative – proposes an innovative, five-year program, designed in partnership with the National Department of Health (NDoH), to increase access to HIV testing and life saving treatment while strengthening existing national health systems, particularly in rural areas.

Through initial Phase I funding (2006-2010) from the Australian Agency for International Development (AusAID) of AUD 10,000,000, CHAI and NDoH have demonstrated that expanding access to ART in PNG, even in rural and remote communities, is not only possible, but also serves as a concrete method for revitalizing public health systems. Over the past four years, CHAI's *Laboratory, Supply Chain Management, Prevention of Parent to Child Transmission & Paediatrics*, and *Rural Initiative* programs have catalyzed critical shifts in the national response.

Most importantly, these efforts have resulted in thousands of lives saved. In partnership with provincial and district level hospitals and health facilities, accomplishments of Phase I include:

- Development of a national model for rural HIV care and treatment through **expanded access to HIV services for over 500,000 people** in the Eastern Highlands Province
- Creation of a national Early Infant Diagnosis (EID) system using DNA PCR technology with **over 1,000 infants tested for HIV**
- Establishment of an ARV supply chain and forecasting system which has **prevented national level drug stock-outs** since 2008 to the present
- Nationwide training, clinical mentoring, and technical assistance for health care workers in the care and treatment of children with HIV
- **Over 6,000 people in rural communities tested for HIV** through pioneering, hospital-based rural outreach programs
- Implementation of an innovative Case Management system that has **reduced lost to follow-up from 70% to 2% in women and their infants** utilising PPTCT services and **from 65% to 15% among adult ART patients in Eastern Highlands Province**

A 2009 independent review commissioned by AusAID found that CHAI was

"... a well managed project that has created enthusiasm and ownership in many areas. It has been exemplary in the way it has carefully considered the pace of rollout of all program areas, and has taken time to reflect and analyse many elements of it. Its commitment to building local capacity has been outstanding." (Heywood 2009)

This document presents a design for a five-year CHAI Phase II Program 2011-2015. The program will consolidate gains made to ensure sustainability by the national health system. Phase II will work to leverage Phase I efforts to further expand access to testing and treatment through the replication of successful interventions.

The program will continue to work with organisations to leverage existing systems, structures, and resources to catalyse new solutions and deliver better services to its clients. The program will support capacity development in systems that have historically been weak or ineffective. It will work with government counterparts and other stakeholder to maximise efficiencies and effectiveness.

Investment from AusAID in the CHAI's effort over the next five years will contribute to:

- Increasing access to HIV services and revitalizing district level primary health services in Eastern, Western, and Southern Highlands Provinces in rural PNG, which serve over 1 million people – *nearly a sixth of the nation's population*.
- Vastly reducing the number of infants born with HIV through unique prevention of parent to child transmission programs
- Scaling up high quality paediatric HIV care and treatment for hundreds of infected children at five national treatment sites
- Strengthening the national HIV laboratory and catalyse the adoption of critical technology such as viral load monitoring and point of care CD4
- Enhancing HIV commodity forecasting, procurement, management, and distribution through a central logistics management information system

The CHAI Phase II Program is in alignment with the new *PNG National HIV Strategy (2011-2015)*. The Program also supports seven Key Results Areas (KRAs) of the new *National Health Plan (2011-2020)*, and has provided a valuable opportunity to make explicit the existing and ongoing contributions to broader health system strengthening by CHAI PNG. The goal of CHAI PNG Phase II Program is: "Reduced transmission of HIV and other STIs and impact on individuals, families and communities in selected localities is minimised"; this aligns with the PNG Government's National HIV Strategy 2011-2015.

CHAI PNG Phase II program has six components: 1) Supply Chain Management & Logistics, 2) Laboratory Services, 3) PPTCT and Paediatrics, 4) Rural Initiative, 5) Operation Research, Monitoring and Evaluation, and 6) Management and Coordination. **Components 1 and 2** will strengthen the capacity of NDoH supply chain and logistics and laboratory services to provide support prevention of parent to child transmission (PPTCT) and paediatric ART in CHAI-supported urban and rural health facilities. **Component 3** is designed to improve the coverage and quality of NDoH's PPTCT and paediatric ART services in CHAI-supported urban and rural sites. CHAI's **Component 4** activities will strengthen the capacity of sub-provincial levels (districts and aid posts) to provide quality PPTCT and paediatric and adult ARV treatment. CHAI's **Component 5** research, monitoring and evaluation activities will assist NDoH in evidence generation for best practice to inform national policy. CHAI's program will lead to improved health outcomes for patients and clients of CHAI-supported services. **Component 6** will provide the support to programs to manage these program outcomes.

The five-year program will be implemented in two stages. Stage 1 will be implemented from January 2011 to December 2012 and will lay the foundation for Stage 2 implementation from January 2013 to December 2015.

The total cost of the Phase II project over five years (2011 to 2015) is calculated as AUD 27,095350. A two-year budget for Stage 1 is AUD 11,064,405; the remaining three years of Stage 2 have an estimated budget of AUD 16,030,945. Throughout the globe, CHAI strives to reduce overhead expenses and the PNG program is no exception, despite the high in-country operating costs. CHAI prides itself on its ability to contribute as much funding as possible to directly support programs and patients: consistent

with Phase I, expenditure on personnel is less than eighteen percent of the overall budget. CHAI's overhead and personnel expenditures are considerably less than many organizations operating on the ground in PNG.

From the establishment of a National system for Early Infant Diagnosis and provision of paediatric treatment, to the nation's first successful effort to bring HIV testing, care, and treatment into the heart of rural communities, this has been a time of remarkable progress where PNG's health system has taken a leading role with CHAI support as needed. Phase II affords the unique opportunity to ensure that those advances remain. And it also allows for an unprecedented opportunity for NDoH, AusAID, and CHAI to partner together and exponentially increase the number of lives saved while revitalizing public health infrastructure in PNG.

1. ANALYSIS AND STRATEGIC CONTEXT

1.1 Background

Papua New Guinea (PNG) is the largest of the 22 Pacific Island Countries and Territories with about 68% the region's total population of nine and half million. PNG's population in 2009 was estimated at 6.6 million and is growing by annual average of 2.7% (2000 Census). Most of the population (about 87%) lives in rural communities based on the traditional village structure and dependent on subsistence farming supplemented by cash cropping. Around 40 per cent of PNG's population lives on less than USD 1 a day. Increasing numbers of people are moving to urban centres, where poverty, unemployment and civil unrest are growing (Australian Government: AusAID 2010).

PNG's population is geographically and culturally diverse with over 800 linguistic groups. Many communities live in remote areas of the country accessible only by air or on foot, making service delivery expensive and logistically challenging. These communities have difficulty accessing quality health care, education and adequate transport.

PNG has a growing economy built upon its abundant natural resources. Of particular significance is the USD 15 billion Liquefied Natural Gas (LNG) project in Hides, Southern Highlands Province, which is expected to double the gross national product of the country. While the LNG Project is expected to provide significant economic benefits for the country, in the interim it is creating difficulties for other sectors of the country, including the health sector. Experienced health care workers (HCWs) are leaving the health sector to work with the LNG Project, often in non-health capacity, because of the higher salaries offered.

PNG's main social indicators, such as life expectancy (57 years), infant mortality (57 per 1,000 live births), and maternal mortality (733 per 100,000 deliveries) have improved since 1975. However, although the country is classified as a 'Lower middle income country', the indicators of health status are still well below the averages for lower middle income countries (Australian Government: AusAID 2010). PNG ranked 148 out of 182 countries in the 2009 Human Development Index compiled by the United Nations Development Programme. A number of PNG health indicators are the lowest performing in the Pacific Region. For example, life expectancy is 15 years shorter and maternal mortality 3.5 times higher in PNG than in Fiji (Papua New Guinea National Department of Health 2010).

Infectious diseases claim many lives; there are serious public health risks from endemic diseases such as malaria and the HIV epidemic.

The new PNG National Health Plan (2011 to 2020) has identified a number of problems with access to health services that require urgent attention. Primary health care provision, particularly for the rural majority, has deteriorated in the last decade, with 781 aid posts being closed. Currently 71% of registered aid posts are open. From 2003 to 2008 the general inpatient bed numbers decreased by 1,328. The national trend on the number of outpatient visits per person to health centres (not aid posts) over the past 5 years has also gradually declined. Outreach clinics from health centres to rural remote villages that provide essential immunisation, nutrition monitoring, antenatal care and family planning have stalled from an already unacceptable low level.

1.2 HIV & AIDS Situation in PNG

PNG has the most serious HIV epidemic in the Pacific region. In the most recent estimation and projection exercise conducted in June 2010, national HIV prevalence was estimated to be 0.9% in 2009. It was also estimated that 34,100 people are currently living with HIV, 3,200 people were newly

infected in 2009 and 1,300 people died because of HIV related illnesses in 2009.

In 2007, national HIV prevalence was estimated to be around 1.6% and it was projected that prevalence would exceed 3% by 2010. While this estimate and projection were based on the best available data at the time, they are now thought to be overestimates. Additional epidemiological data has since become available through an expansion of surveillance and reporting systems. The 2010 estimates and projection exercise was based on data from 104 antenatal sites compared to 45 sites in 2007. However, limitations of these new estimates include potential bias associated with ANC surveillance data. Women at higher risk of HIV may be opting out of ANC services. Currently, only 60% of pregnant women attend ANC during their pregnancy.

It is now becoming evident that the trends of the epidemic across the country are not the same. In the Highlands and Southern regions, for example, HIV prevalence remains at a generalized epidemic level, with estimates at 1.02% and 1.17% respectively. There is preliminary evidence of some levelling off in prevalence in some provinces and rapid increases in some others. Although the surveillance systems are improving and more people are being tested, there is much that is still unknown about the scale and impact of the epidemic. The need to rapidly strengthen surveillance is clear.

The majority (95.5%) of all HIV cases in PNG has been reported from the National Capital District (40%) and other urban and peri-urban areas in seven provinces linked by the Highlands Highway: Western Highlands Province (17%); Eastern Highlands Province (15%), Enga 7%, Morobe (7%), Southern Highlands Province (5%), Simbu (2.5%), and Madang (2%) (PNG National AIDS Council Secretariat 2010). However, available data indicates that the epidemic extends to every province in the country, is increasingly spreading to rural areas, where 87% of the PNG population lives, and clustered around concentrations of population, transport routes and rural enclave enterprises where there are active markets for the exchange and sale of sex.

Heterosexual sex is the predominant mode of transmission recorded, although mode of transmission is not recorded for over 51% of reported HIV infections in PNG (PNG National AIDS Council Secretariat 2010). Studies indicate important drivers of the HIV epidemic in PNG include high levels of concurrent and multiple sexual partnerships, unprotected anal and vaginal intercourse, and high prevalence of untreated sexually transmitted infections in the general population (Inter-Agency Task Team 2009). Drugs and alcohol use are closely associated with sexual violence and non-use of condoms (Baldwin S 2007). Disparity in gender rights, high incidence of rape, sexual aggression and other forms of violence against women are also aiding the spread of HIV. More than 30 percent of the population lives in poverty with unemployment fuelling rural migration to urban areas and informal sex work.

Notifications of HIV reveal more women (60%) than men are being diagnosed. Where age is recorded on HIV notification forms, available data at the end of 2007 indicate that most HIV infections are in the 20 to 29 age-group. The most common age at time of diagnosis for males is in the 25-29 year and 30-34 year age groups. Available data suggest that the peak of female infection is 20-24 years. The higher number of HIV infections in women is, in part, a reflection of testing practices not sexual practices (Bradley 2009). Since antenatal clinics are among the sites selected for sentinel HIV surveillance, young child-bearing women who attend antenatal clinics are likely to be tested; there is no regular testing for men in this age group. However 2008 data from voluntary counselling and testing (VCT) sites suggest that the HIV prevalence may indeed be higher in women than in men. The HIV prevalence among women and men attending VCT centres in 2008 was 4.7% and 3.8% respectively. The numbers of women and men tested were similar – 23,028 women versus 22,465 men (PNG National AIDS Council Secretariat 2010).

The HIV epidemic is affecting the lives of individuals, families and communities with high burden of infections. Recent 2009 estimations from the National Department of Health (NDoH) reveals that nearly

11,520 people have died from AIDS-related illnesses and 5,610 children were orphaned as a result of AIDS. Children who are affected by HIV are particularly vulnerable because as they are more likely to be orphaned, drop out of school, live in child-headed households and experience stigmatisation and discrimination. The private sector is also feeling the effects of the increasing number of HIV infections. In a 2009 survey conducted by the PNG Business Coalition against HIV and AIDS (BAHA), 25% of the businesses surveyed reported that they have evidence that HIV is having an impact on their business. Of concern, 75% of the businesses reported that they expect a loss of staff; 76% expect increased costs of recruitment and a third expect a loss of customers in the next five years.

Stigma and discrimination are among the most pernicious effects of the HIV epidemic. Severe manifestations of stigma and discrimination have resulted in human rights violations, rejection, violence, and death. Stigma and discrimination are also major barriers to effective prevention, treatment and care responses to the epidemic. Stigma in health care settings deters people from accessing HIV testing, counselling, treatment, and care services, including antenatal visits because of fear of disclosure and the potentially negative social consequences both within families and communities.

1.3 The HIV Response in PNG

Multi-sectoral response

Over the last twenty years, the scale of the HIV response in PNG has increased in magnitude and complexity, even as the epidemic has continued to expand. In particular the last five years have seen significant improvements in the health sector response to the epidemic. While PNG has had significant gains in its efforts to curb the growing HIV epidemic, it continues to fall short in fully addressing the prevention, treatment, and care needs throughout the country. The Independent Review Group (IRG) on HIV& AIDS, which comprises international experts and senior Papua New Guineans, monitors the implementation of the PNG National Strategic Plan on HIV/AIDS 2006 – 2010 and provides an assessment of progress to the PNG Government and its development partners. Both the 2009 and 2010 IRG reports confirmed continuing progress since September 2008, despite major challenges, although achievements are not enough to halt the continued spread of the epidemic. The IRG emphasises that achievements need to be further strengthened in all areas (Australian Agency for International Development 2009).

PNG is implementing a multi-partner and multi-sectoral response to the HIV epidemic. In addition to national and provincial governments, partners in the national response include people living with HIV, faith based organizations, civil society organizations, national and international NGOs, the private sector and economic enclaves and development and donor partners.

The National AIDS Council (NAC) was established in 1998 as the mandated body to provide leadership and direction for the HIV response in PNG. A key responsibility for the NAC is keeping HIV high on the government's broader development agenda and ensuring that key sectors prioritise HIV as a development issue in their planning and budgeting processes (Australian Agency for International Development 2009). The Council is serviced by the NAC Secretariat (NACS), which is responsible for managing the coordination of the multi-sectoral response. NACS has struggled to perform its functions in recent years, however, restructure of the agency is underway and aims to better align with its functions as a coordinating body.

At the national level, degree of engagement of the different partners and sectors differs considerably. The IRG noted in the August 2010 report that there is an urgent need for leadership at the highest level within government agencies to acknowledge and address HIV issues on two fronts: first as it relates to their agency or sectoral responsibilities, and second with respect to updating their workplace policies or

implementing them.

Provincial AIDS Councils (PAC) and their secretariats (PACS) have been established and memoranda of understanding with provincial governments developed, however as noted by the IRG, there is “a sharp contrast between provinces that have made HIV a priority and those that have not” (Independent Review Group August 2010). A clearer definition of the roles and responsibilities of provincial governments in taking a lead on HIV and AIDS issues has recently emerged. HIV has now been included in the new *Determination for service delivery function and responsibility assignment* approved by the National Executive Council (NEC), the national body that approves all government department budgets, in June 2009. This may lead to consideration of a separate grant to provinces for HIV, which would considerably strengthen and resource the local response to HIV (Australian Agency for International Development 2009).

HIV Legislation

The HIV/AIDS Management and Prevention (HAMP) Act 2003 was endorsed by the national parliament in 2003 (National AIDS Council Secretariat 2004). The Act’s main purpose is to manage and provide avenues towards prevention and spread of HIV/AIDS. Its main emphasis is to protect the rights of People living with HIV/AIDS and to ensure confidentiality for those that seek HIV prevention, treatment, and/or care services.

National HIV strategic planning

A new five-year National HIV Strategy (NHS) 2011 – 2015 has been redeveloped to succeed the 2006 to 2010 strategic plan. The plan prioritises increased access to HIV prevention, care and treatment, including prevention of parent to child transmission (PPTCT) services and is integrated into the National Health Plan 2010-2020.

The two major Priority Areas are scaling up and improving the quality of 1) prevention programs; and 2) counselling, testing, treatment, care and support services. To effectively achieve the goals of the Priority Areas, the national response will make a concerted effort to address a range of key crosscutting issues including:

- Gender inequality;
- The meaningful involvement of people living with HIV;
- Reducing HIV-related stigma and discrimination;
- Capacity building and mobilisation of people, communities, and organizations;
- Effective use of research, surveillance, and monitoring and evaluation data;
- Sustained and visible leadership at all levels;
- Improved coordination at national and sub-national levels.

The NHS has grouped strategic priorities relating to each of these crosscutting areas under a third major Priority Area of ‘Systems Strengthening’.

HIV Prevention

There has been a significant scaling up in HIV training and support for prevention, including condom procurement and distribution. Four thousand peer educators have been trained, and over 120,000 people and 60,000 school children have attended formal HIV training and awareness programs. Education and awareness materials have been reviewed and updated, and take more account of local languages and contexts in PNG. In late 2009, the NAC endorsed PNG’s first National HIV Prevention Strategy that forms the basis for the priority area of prevention in the NHS (the Prevention Strategy has now been subsumed into the NHS).

Despite these improvements, overall the prevention response is regarded as inadequate in nature, intensity, and scale. There is a pressing need to move beyond simple HIV awareness to a full range of evidence-informed prevention strategies. The failure to mount an effective prevention response has been the most significant gap in the national response to HIV.

The 2010 IRG report identifies the following gaps and priorities in the HIV prevention response:

- There is no serious HIV prevention work underway nationally or in the provinces to address the structural drivers of the epidemic such as gender inequalities, gender and sexual violence, development-induced displacement and marginalisation, livelihood security and mobility.
- While the education sector leads all other sectors in its prevention response, it lacks a strategy for scale-up to reach all schools with HIV-related course materials and to train the large body of teachers who are already in post. Equally, it lacks plans to evaluate the impact of its pre-service teacher training program on the quality of HIV education being delivered in schools, and on students' knowledge and skills after receiving education based on the new HIV course curriculum. In relation to training, lack of coordination among various training providers means a duplication of effort and lack of quality control.
- Condom availability, especially female condoms and lubricants and their timely and even distribution nationwide to HIV prevention programs particularly for most-at-risk groups, remains problematic and is a cause for serious concern. Condom 'stock-outs' point out to major supply and distribution weaknesses which require urgent attention by NACS and NDoH to avoid an impending crisis of 'condom scarcity'.

Challenges in the health care setting for prevention remain including the following:

- High rates of sexually transmitted infections (STIs)
- Low coverage of prevention of parent to child transmission interventions
- Inadequate infection Control
- Low condom distribution and use in health facilities
- Low laboratory capacity to support prevention, treatment and care services
- Poor access to clinical services for sexually abuse clients

HIV prevention programs should increasingly integrate sexual and reproductive health services and HIV testing, treatment and care. In PNG there is a strong likelihood of co-infection with other STIs as well as tuberculosis. Improved integration of these treatment services, both within the health sector and through links to community-based programs of care and support are essential. Integration also facilitates the synergies between programs in relation to training and capacity building, procurement and distribution of essential resources, and infrastructure needs.

HIV Counselling & Testing

Expanding access and increasing uptake of testing, treatment, care, and support services for HIV is fundamental to the achievement of PNG's national targets. A total of 123,661 tests were reported from 250 HIV testing health facilities in 2009, compared to 120,607 tests conducted and reported from 201 sites in 2008. Seventy one percent (71%) of reported HIV tests (88,148 tests) were conducted in all Highlands provinces, NCD, and Morobe province in 2009. In contrast, numbers of reported HIV tests were very low in coastal and island provinces such as Gulf (854 tests), Manus (1,049 tests), East Sepik (1,389 tests), and New Ireland provinces (1,403 cases).

HIV tests were conducted at six different sites -- VCT, ANC, TB, and STI clinics, blood banks and other health sites. The number and proportion of tests in each site is shown in Figure 1 below.

Figure 1: Number and Percent of HIV Tests per Site

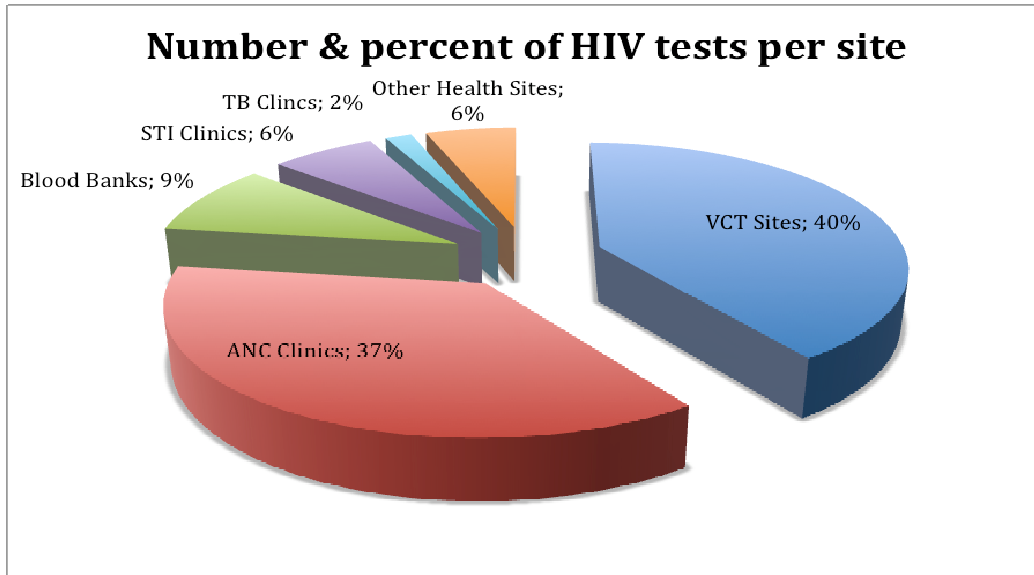
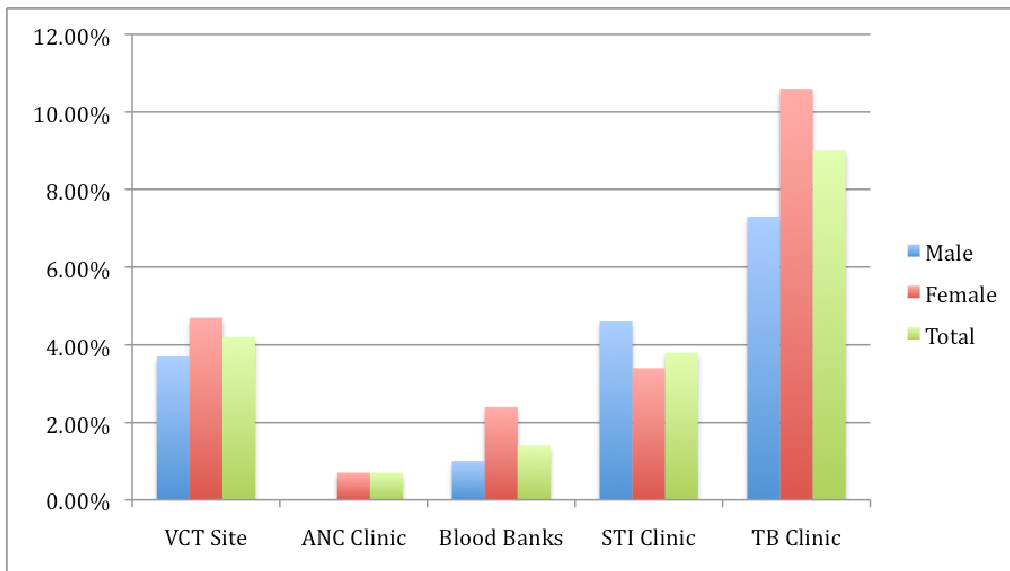


Figure 2 shows the reported HIV prevalence at each site was highest at TB clinics followed by VCT sites, STI clinics, blood banks, and finally ANC clinics.

Figure 2: HIV Prevalence by Site



Treatment, Care and Support

Scaling up of antiretroviral therapy in the last couple of years has been commendable. In 2009, a total of 2,886 people living with HIV newly registered for antiretroviral therapy (ART) at 55 sites across the country, an increase of 617 over the 2,267 PLHIV registered for ART in 2008. This brings the cumulative total of HIV+ adults and children receiving ART since 2004 to 6,367 and 427 respectively.

Universal Access (UA) and UNGASS reports for 2009 indicate that ART access in PNG has reached 73%

based on a CD4 initiation count of < 200. This calculation needs to be updated in light of the current guidelines of CD4 initiation of < 350, when it is expected to fall substantially. There is an ongoing exercise to physically verify the actual number of active ART patients that are further likely to reduce UA coverage percentage.

By the end of December 2009, a total of 881 women (84 in 2007, 534 in 2008, and 263 in 2009) received ART to reduce mother-to-child transmission and 251 babies (less than 1 year old) born to HIV positive women received ART.

Despite the progress made in increasing access to HIV and STI treatment and care services, there are still significant unmet needs:

- While there has been an increasing effort to provide PPTCT services, the coverage rate for the full package of PPTCT services has remained at a very low level, reflecting the difficulty in achieving a high level of coordination between services and significant challenges within weak maternal and child health services.
- Similar difficulties remain in links between HIV counselling and testing and tuberculosis, post exposure prophylaxis and gender based violence services.
- Although PNG has one of the highest rates of sexually transmitted infections in the world, STI services are under-resourced and largely lost in the broader HIV response. The weakness of the public health system has been a major constraint to scale-up and there is no strategy for overall health system strengthening, although the new national health plan (2011 – 2020) has a focus on strengthening the health system. Other limiting factors have been:
 - An absence of systems for coordinating different components of treatment and care, resulting in loss to follow-up (LTFU), especially in PPTCT;
 - The vertical nature of service delivery rather than an integrated, one-stop approach;
 - Insufficient emphasis on quality assurance; and
 - Poor access to services, particularly for stigmatised groups.
- TB/HIV services in PNG continue to be sub-optimal. In 2009, of the reported 8,989 TB cases only 4% had an HIV test, and of the 357 individuals tested 17.0% were reported to be HIV positive. This implies 1,450 missed cases of HIV in persons with TB that needed to be evaluated for ART. The area of TB/HIV co-management is clearly a priority area.
- In 2008 there were 56,412 cases of STI reported nationally, but only 6% of these were offered or accepted an HIV test (implying 4,200 cases of HIV were not diagnosed). This is a missed opportunity and a huge threat as large numbers of individuals leave health services not knowing they are HIV positive (Independent Review Group, August 2010).

Surveillance and Research

Although there has been significant investment in capacity building and systems to monitor the national response, the amount of data to assess progress remains thin. NDoH has strengthened its HIV surveillance systems but there are still significant problems in the completeness and quality of data. Presently the surveillance system cannot tell us where new infections are occurring; and there is a limited understanding of the patterns of infection and particular behavioural practices that are driving the epidemic.

Estimates of prevalence trends over time are based on data collected from women attending those antenatal clinics where HIV testing is offered as part of routine care. Potential biases associated with antenatal clinic surveillance in PNG should be considered. For example, pregnant women may not be representative of all adult women, women at higher risk of HIV may be opting out of testing, and there may be under-reporting of HIV in antenatal clinics. In absence of reliable data on prevalence among adult men and women in the general population, the assumption was made that the prevalence ratio is 1. However, this assumption needs further investigation as it could substantially affect the overall national estimates. While the expanded ANC testing data now provide a more comprehensive picture of HIV prevalence among women in PNG, there is no comparable systematic, national information for prevalence among men.

The establishment of Provincial Monitoring Evaluation and Surveillance Teams (ProMEST) has the potential to strengthen data collection and use at the provincial level when fully operational in all provinces. However, this system has yet to become fully functional and adequately resourced in any province.

Progress in social and behavioural research has been significant in recent years. The Australian Agency for International Development (AusAID) has supported the development of a National Research Agenda, and is funding the PNG's first large scale HIV research grants program. Mechanisms have been established for coordinating research and disseminating results, which have laid the basis for evidence informed program development.

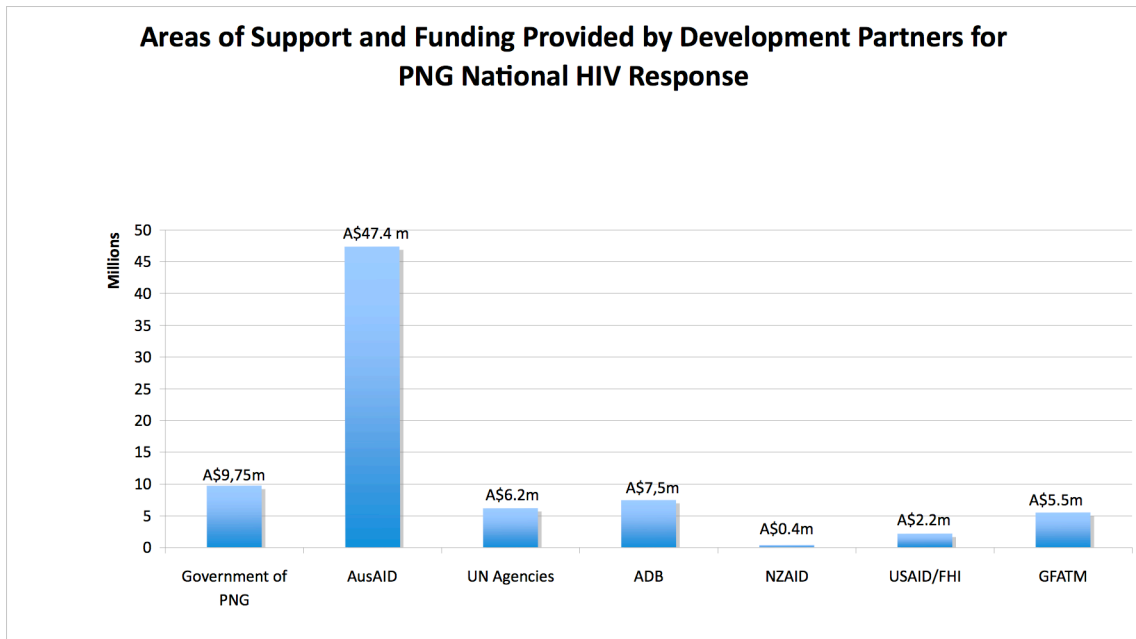
International Development Partners Support

Bilateral and multilateral development partners provide the majority (88%) of funding for the HIV response in PNG, with the remaining 12% of funding provided by the government of PNG (GoPNG). This imbalance is a common concern for development partners and NDoH – there is a need for a sustainable model that can increase resources to adequately address the needs and also shift more resource responsibility to the government. *Figure 3* below shows the key development partners supporting the PNG HIV response and the amounts of funding provided in 2008.

Australia contributes more than 60% of the funding for PNG HIV response. Other players that have strengthened their involvement include USAID through Family Health International (FHI) for Continuum of Care Project which is strengthening care continuum in Madang and the National Capital District; the Asian Development Bank (ADB) Rural Development Enclaves Project which is well underway in six enclave sites, and; Population Services International (PSI) which is undertaking behaviour change initiative and marketing the condom Seif Raida (Australian Agency for International Development 2009).

The majority of funding is provided directly to NGOs and other members of civil society.

Figure 3: Areas of Support and Funding Provided by Development Partners for PNG National HIV Response



2. CHAI RESPONSE

2.1 Clinton Health Access Initiative (CHAI) in PNG

Around the world, the Clinton Health Access Initiative (formerly known as Clinton Foundation HIV/AIDS Initiative) partners with governments and drug manufacturers to make treatment for HIV/AIDS more affordable and to implement national programs to reach patients in need. CHAI continuously works to reduce the cost of key medications and medical technologies to enable the expansion of quality care and treatment services. More than 70 countries are part of CHAI's Procurement Consortium for reduced pricing. In more than 30 countries, CHAI also maintains teams, which assist governments to respond effectively and efficiently to the HIV/AIDS epidemic. CHAI has been active in the care and treatment response in PNG from 2006 when AusAID signed a Memorandum of Understanding (MoU) with Clinton Foundation to support funding of up to AUD 25 million over four years to scale-up care and treatment for people living with HIV in China, Vietnam and PNG (and later Indonesia). In that year AusAID signed a funding agreement for AUD 10,202,351 up to the end of 2009 to support the Clinton Foundation initiative in PNG.

This phase of the program will continue to work with organisations to leverage existing systems, structures, and resources, in the process catalyse new solutions and deliver better services to its clients. The program will support capacity development in systems that have historically been weak or ineffective. It will work with government counterparts and other stakeholder to maximise efficiencies and effectiveness.

The program will strengthen partnership and collaboration with GoPNG, AusAID, and other stakeholders involved in scaling-up HIV care and treatment. The proposed structure will integrate into existing structures and systems. While GoPNG - and especially NDoH - is CHAI's primary partner, it is recognized that numerous entities help to deliver healthcare services and work closely and collaboratively with many of them. Some of the partnerships include:

- **Laboratories** / NDoH, CPHL, WHO, CDC, ADB, UNICEF, Burnet Institute, Catholic Health Services, provincial laboratories, EID sites
- **Supply Chain Management** / NDoH & the National Logistics Unit, GFATM, UNICEF, WHO, and ART sites
- **PPTCT & Paediatrics** / NDoH & TWG, Paediatric Society, UNICEF, PMGH, Provincial Hospitals, Friends Foundation, Diocese of Bereina, Susu Mamas, FHI
- **Rural Initiative** / Provincial Health Services, Provincial Hospitals and District-level health facilities, UNICEF, Save the Children, Catholic Health Services, Mercy Works, Sunrise Integrated Health Ministry, University of Goroka, Paship, FHI, Mini Vava, AT Projects, Dioceses of Mendi

CHAI will for example collaborate with: UNICEF on nutrition, site renovation, and paediatric HIV commodities procurement; Susu Mamas on infant feeding; WHO on 2 test algorithm and supply chain; ADB on CD4s; Mini Vava on expert client counseling; Friends Foundation on psycho-social support for HIV+ families; Catholic Health Services on DBS and EID/EIT rollout, ART rollout in rural sites; FHI on community home-based care in EHP; and AT Projects on innovative, low-cost solutions for district site renovations.

2.2 CHAI Phase I

During Phase I, CHAI has been working alongside NDoH to implement the National HIV Strategic Plan 2006-2010 in four focal areas: 1) Supply Chain Management, 2) PPTCT and Paediatrics, 3) Laboratory, and 4) the Rural Initiative. NDoH identified these as critical areas needing technical assistance. Working

in partnership at national, provincial, and district site levels, CHAI has increased overall capacity to test, diagnose, treat and care for both children and adults with HIV.

Additionally, CHAI has been the exclusive provider of all paediatric formulations of antiretrovirals (ARVs) through UNITAID, an international drug purchasing facility that seeks to reduce the prices of drugs and diagnostics to treat not only HIV/AIDS, but also TB and malaria. UNITAID funding in PNG also financed the procurement of equipment and renovations related to the establishment of systems for early infant diagnosis (EID).

Supply Chain Management

ISSUE AND ITS IMPACT: The medical supply system has long been identified as a significant issue in Papua New Guinea. The system faces numerous challenges: lack of adequate human resources and infrastructure, along with persistent resource constraints and difficult physical environments, have led to a logistics system that functions sub-optimally at best. Lack of funds for example have delayed needed renovations for securely storing HIV commodities; deliveries to remote sites are extremely costly and difficult given current transportation infrastructure and safety/security concerns. In addition, resource constraints exacerbate already tenuous managerial controls and loosen safeguards against graft and corruption. Effectively forecasting HIV commodities, monitoring stocks, and distributing ARVs to the sites in the country through this system, therefore, have strong negative consequences. Stockouts of ARV drugs can gravely impact patients' clinical outcomes, including death.

WHAT CHAI HAS DONE IN PHASE I: in the past three years, CHAI has worked with the National Logistics Unit and the Global Fund for AIDS, TB, and Malaria (GFATM) to develop and implement a complementary HIV supply chain system that can efficiently and routinely forecast, procure, and distribute HIV commodities throughout the country. CHAI has assisted the Unit with support in quantification, forecasting, and reporting of paediatric drugs as well as commodities associated with DNA-PCR and the Early Infant Diagnosis system. The introduction of paediatric fixed dose combination ARVs (now being used by 85% of children on ART) has been an important CHAI contribution in the area of paediatric treatment.

The program has helped build infrastructure, including a patient level database, for data capture and surveillance of the efficacy of the program. In addition, training has been provided to sites in order to increase country capacity to manage data and utilise information technology in the treatment process. CHAI's Supply Chain Management program has widened its scope by initiating a pilot program for Plumpynut, a ready-to-use-therapeutic food (RUTF) for malnourished children. The goal is to help ARV sites treat severely underweight paediatric patients and capture data about the effectiveness of RUTF to increase weight, an indicator for improved health. Through improved forecasting and procurement processes, as well as supply chain management, the program has been able to serve the growing number of patients accessing care while reducing relative cost. The Supply Chain Management program has achieved this by improving site level inventory information, reducing the amount of expired drugs by implementing First In First Out (FIFO) supply management principles and aided by reconfiguration and improved management of the store room, and consistently reviewing distribution data.

At the Department's request, CHAI has funded an additional logistics officer embedded within the NDoH Logistics Unit. In addition, CHAI has successfully advocated for NDoH adoption of numerous measures and standard operating procedures (SOPs) to improve distribution system for HIV supplies. Finally, CHAI continuously works through its global team to reduce the cost of key medications and medical technologies to enable the expansion of quality care and treatment services. More than 70 countries are part of CHAI's Procurement Consortium for reduced pricing. As a member of CHAI's Procurement Consortium, PNG is able to access preferred pricing for ARV medicines, HIV diagnostic equipment, reagents and rapid testing.

An independent AusAID-funded evaluation of CHAI PNG Phase I highlighted the following key input from the Supply Chain Management program:

CHAI PNG has significantly helped to strengthen the management capacity of the procurement and supply chain for HIV drugs and commodities. Since CHAI PNG began assisting NDoH in supply Chain Management (SCM), there have been no national level

stockouts of HIV drugs and commodities. Needs forecasting has been improved, and CHAI has been able to gap-fill as issues arise that impede smooth operation of the supply chain. CHAI PNG is providing assistance for the development of a new database to assist inventory management. (Heywood 2009)

CURRENT SITUATION AND FUTURE NEED

The Supply Chain Management for HIV commodities is a complementary system to that used by the NDoH's Logistics Unit for other health sector commodities. This situation arose because of the systemic problems in NDoH Logistics Unit that has low capacity and required donor support to maintain core functions. CHAI's success with assisting NDoH to significantly improve on procurement and distribution of HIV commodities has shown that it is possible to overcome the problems experienced by the Logistics Unit. Current levels of training, human resources, and technical expertise, while significantly improved through CHAI support in Phase I, still require further support. Ultimately, NDoH should have only one supply chain management system for all health sector commodities. However, all stakeholders agree that until there is confidence that the Area Medical Store (AMS) can handle the HIV commodities procurement and distribution without stockouts, a separate supply management system should be maintained because the consequences of stockouts for HIV medications can be very severe. Finally, there have been some significant, hopeful events in the last few months regarding GoPNG and its ability and willingness to directly fund HIV commodities and programs. With the impending transition of the UNITAID donation that has supplied the nation's Paediatric HIV commodities at the end of 2010 and the failure of the Round 9 GFATM proposal, NACS stepped in and secured PGK 6 million for NDoH's HIV program. These funds will smooth the transition to GFATM Continuity of Service (COS) funds and future GFATM funding (as written into the recent COS and Round 10 application). In addition, NDoH has submitted a PGK 15 million budget for 2011, which will then be able to fund all HIV commodities if the GFATM applications fail.

In Phase II, CHAI proposes to continue to support NDoH to maintain the supply chain management for HIV commodities. The Program will also continue to strengthen the capacity of the NDoH Logistics section with the aim of merging the HIV commodities supply chain system with the main AMS system in future.

Laboratory

ISSUE AND ITS IMPACT: Sound laboratory services are essential components of a comprehensive, robust HIV strategy. These core services are crucial for initial HIV diagnosis as well as monitoring the disease progression. In PNG, laboratory services from the central to the provincial levels have struggled with numerous issues: severe resource constraints (e.g., recurrent budgets without maintenance costs of equipment), low human resource capacity, poor skills development (e.g., low training skills uptake), and inconsistent leadership. The impact of these issues can lead to an unknown diagnosis, poor patient monitoring and sub-optimal clinical outcomes including death. For example, HIV diagnosis is currently carried out using a screening rapid test at the point of testing followed by a laboratory confirmatory test in the case where a patient's test is reactive. This has many limitations in PNG including long delays in reporting of confirmatory results from provincial laboratories and difficulties in specimen transportation due to the unique logistics in the country. Thus, patients often don't return for their results.

Equally alarming, clinicians providing services for HIV patients in PNG do not always have access to reliable monitoring tests to determine the patients' accurate candidacy for ART and subsequent monitoring of efficacy of their treatment. Without comprehensive, reliable coverage of CD4 testing and/or viral load testing in PNG, patients must be monitored using clinical indicators according to the World Health Organization (WHO) staging system and in some cases total lymphocyte counts. While clinical staging is an essential indicator of disease progression, they are not reliable or sensitive enough to predict candidacy for ART or ART failure. The impact for HIV+ patients can be devastating, especially for infants and children living with the disease. There is a high risk of death before two years among HIV-infected infants (up to 50% in the first 12 months in PNG).

WHAT CHAI HAS DONE IN PHASE I: CHAI technical assistance to Laboratory Services in PNG has worked primarily in early infant diagnosis, HIV Rapid Testing, CD4 testing, and Quality Assurance of HIV and CD4 tests. CHAI has successfully worked to establish a system for Early Infant Diagnosis (EID) in PNG with two staff from the Central Public Health Laboratory (CPHL) – the national referral laboratory – now trained to run PCR testing (PCR is the EID platform which can confirm HIV status of infants as young as 6 weeks). Initiation of ART for HIV+ infants less than 12 months of age can reduce mortality rates by 75%. EID enables the provision of appropriate care and treatment for patients less than 18 months of age, whose HIV+ status cannot be confirmed using serological testing. By the end of 2009: 138 health personnel had been trained in EID and in the collection of dried blood spot (DBS) samples from babies, six (6) laboratory personnel had been trained in PCR testing technique, 51 sites were enrolled in the EID program, 708 exposed infants had been tested for HIV of which 157 (22.2%) were confirmed HIV positive. Early Infant Diagnosis, combined with the adoption of Early Infant Treatment guidelines described above, has been a key contribution in averting deaths for infants infected with HIV,

CHAi has retrained all CD4 operators and new operators and initiated the first CD4 technical working group (for networking, trouble shooting, training QC, SOPs etc). CHAI and CPHL (through a grant from NACS) have also been validating a viral load platform to further advance HIV monitoring in PNG.

To address the issues of laboratory confirmation for HIV diagnosis, CHAI collaborated with WHO and NDoH to initiate a validation study of a two rapid test algorithm for confirmation at the point of testing. The point of care rapid test for HIV will overcome the problem of losing patients who do not return for results when there was an interval of several weeks between initial testing and confirmation. Decentralising the confirmation of HIV test results to the point of care (POC) requires a comprehensive quality assurance system at the testing sites, which is coordinated by the laboratories. CHAI has been actively involved in all three phases of the validation study for training, technical assistance and procurement. In addition, CHAI supported several initiatives in Quality Assurance including the set-up

of National External Quality Assurance System (EQAS) program for rapid testing.

Highlighted from the AusAID-funded evaluation of CHAI PNG Phase I Laboratory program:

Prior to the establishment of EID, the HIV status of babies born to HIV positive women could not be confirmed until the babies were about 18 months old. EID enables HIV diagnosis of infants at six weeks, which allows early initiation of antiretroviral treatment (ART) and leads to significantly better clinical outcomes.

A validation study has changed the dominant HIV testing strategy (a rapid test at the point of care followed by laboratory confirmatory test for blood samples that are reactive) to a 2-Rapid HIV Test Algorithm. This allowed for same-day confirmatory testing at the point of care (eight sites now provide this service). The sites also participated in the External Quality Assurance Scheme (EQAS) program for quality assurance of rapid testing.

Working with the National Department of Health (NDoH), World Health Organization (WHO) and Asian Development Bank (ADB), CHAI has improved the capacity of provincial hospitals and the Central Public Health Laboratory (CPHL) to provide CD4 cell count testing to assist in the treatment and care of people living with HIV. (Heywood, 2009)

CURRENT SITUATION AND FUTURE NEED

Across all areas of laboratory services, deteriorating infrastructure, human resource and the lack of in-country technical capacity present significant challenges. Maintaining laboratory quality over long period of time and laboratory management are additional obstacles. The lack of standard operating procedures (SOPs), a dedicated Quality Assurance Unit, and coordination between the Central Public Health Laboratory and Provincial level hospitals all present obstacles as well. Through support for a robust Quality Assurance Unit at a National Level, many of these issues can be addressed. CHAI PNG is working to assist in this regard by providing technical assistance for quality assurance in EID and HIV serology. In addition, the development of local staff is a major priority through the provision of additional training and many opportunities exist to bring greater capacity to both national and provincial level laboratories.

Despite a three-year period to evaluate and approve the point of care 2 rapid test algorithm, there has still not been a national roll out of this important approach to scaled-up HIV testing. The NDoH reports insufficient capacity to train staff in the technique and to carry out quality assurance as ART roll-out proceeds (Independent Review Group, August 2010).

A large number of HIV+ people continue to be started on treatment and monitored without the benefit of laboratory results such as CD4 counts. In particular, there are some provinces that have no access to CD4 testing. Since the treatment initiation CD4 count was raised to < 350 last year, it is imperative that the national laboratory network has the capacity, the quality and the innovation to provide results in all provinces.

Early Infant Diagnosis and Treatment have been important successes. Since the system of collecting and transporting dried blood samples is now established, it is important to expand the program and include sites from all over the country. The second laboratory at Goroka will be crucial in meeting the expected increase in demand for EID tests.

Prevention of Parent to Child Transmission and Paediatrics

ISSUE AND ITS IMPACT: PPTCT is one of the key interventions for countries like PNG facing a generalised epidemic. While testing of pregnant women at ANC services has increased from 12,534 at 17 ANC sites in 2005 to 45,560 at 178 sites in 2009, only 60% of pregnant women attend ANC. The coverage of the full package of PPTCT services remains inadequately low with only 37% of HIV+ pregnant women having a supervised delivery and only 14% of HIV+ pregnant women receiving ART in 2009 to reduce vertical transmission. Right now the very low coverage of PPTCT interventions combined with the rising prevalence of HIV in both the general and antenatal population have left many children exposed to and infected with HIV. Without PPTCT interventions, the risk of vertical transmission increases to 45% (much higher than the 30% without PPTCT intervention rate reported for developed countries) and vertical transmission of HIV will soon account for approximately 20% of new infections in PNG (2010 HIV Estimations Workshop).

WHAT CHAI HAS DONE IN PHASE I: The PPTCT and Paediatrics Program is focused on strengthening PPTCT interventions and providing high quality care and treatment to HIV exposed and infected children throughout the country. This is accomplished through direct interventions (e.g., clinical case management and clinical mentoring) at major paediatric sites and through national trainings and policy development (e.g., annual clinical paediatric updates and clinical guidelines).

In Phase I, CHAI in collaboration with Port Moresby General Hospital (PMGH) and NDoH, opened the Well Baby Centre at PMGH. The new centre, operational since January 2009, integrates HIV paediatric services with other Well Baby services such as immunisation and nutrition counselling. The centre introduced clinical Case Management (used by CHAI in its Rural Initiative program) that engages and coordinates several players to provide a range of services including diagnosis, treatment, social and psychological support for HIV+ pregnant women and their families from the 'One Stop Shop'. The Case Management model demonstrated that adherence counselling, nutritional and social-economic support services, and systematic follow-up and tracing of patients who miss appointments significantly reduced loss to follow-up for both HIV+ mothers and their infants. The PMGH Well Baby Centre also serves as an educational facility for clinical staff from other high burden provinces to gain practicum and didactic training.

In conjunction with rollout of Early Infant Diagnosis, there is an increased emphasis on getting more HIV positive children in care and treatment. Prior to CHAI's involvement in PPTCT and Paediatric HIV there were 27 children on ART nationwide at one site. The number of children on treatment rose considerably in the three years of operations in PNG. By the end of 2009 there were over 200 children registered or on treatment across PNG. While a majority of these children have been enrolled at two major paediatric sites with CHAI-supported staffing (i.e., PMGH and Goroka General Hospital), CHAI clinical staff have also instituted mentoring plans with paediatric clinicians in the other two key sites (i.e., Mt. Hagen Hospital and Angau Hospital in Lae).

Prior to CHAI's involvement, there were also no national trainings of Paediatric ARV prescribers or paediatric training curriculum. CHAI assistance in Phase I has trained prescribers, established a National curriculum, and also catalysed the adoption of new national guidelines for early infant treatment.

The AusAID-funded evaluation of CHAI PNG Phase I highlighted the following key input from the PPTCT and Paediatric program:

The number of children on ARV treatment increased with implementation of CHAI PNG Phase 1. Early infant diagnosis has led to early infant treatment (EIT) of HIV infected

babies. In 2009, 100 new infants were enrolled in ART, which is double the number enrolled in 2008 (PNG National Department of Health 2009).

Introduction of Case Management model, which engages and coordinates several players and entry points in order to identify, diagnose and retain exposed and infected children and their families. This resulted in significant reduction in the loss to follow-up for both HIV+ mothers and their infants.

(Heywood, 2009)

CURRENT SITUATION AND FUTURE NEED

The PNG UNGASS 2010 report and Universal Access 2009 PNG Final Report reveal that 21% of pregnant women were tested for HIV in 2009 (43,942), identifying approximately 350 HIV positive women. Of these, 73 were evaluated for ART and 251 babies received ARVs for PPTCT. While national PPTCT coverage increased slightly from 11.1% in 2008 to 12.2% in 2009, further increase can only occur with significant investment in maternal and child health (MCH) services that give confidence to women to deliver in health facilities which offer HIV testing and PPTCT services.

At present the absence of a national coordinating entity for Paediatric HIV care and treatment at NDoH presents a significant challenge to ensuring a cohesive response to HIV treatment that adequately addresses the needs of children.

Early identification of HIV infected children in outpatient settings is poor. Many cases are detected in the in-patient setting at which stage treatment can be considerably more difficult. In addition, high LTFU rates and poor overall linkages to PPTCT programs further complicate efforts to scale-up the national response to prevent perinatal transmission as well as treat children infected with HIV.

Through the continued implementation of Case Management, patient retention and quality issues can be more effectively addressed while linkages between PPTCT and paediatric programs can be improved. Moreover, sustained clinical support and mentoring on site can improve the early identification of HIV positive children and also help foster better treatment outcomes.

Rural Initiative

ISSUE AND ITS IMPACT: The majority (87%) of PNG's population live in rural settings. Access to services is frequently extraordinarily difficult. Nearly a third of all aid posts are closed. Retrieval systems for emergent medical situations are limited. Most villages lack any capacity for telecommunications. The rate of unsupervised births in village homes is more than four times the rate for urban areas; immunisation coverage is also lower in rural areas. Child mortality in rural populations is double that of urban children. Diarrhoeal disease and acute respiratory infections occur at higher incidence. Limited access to health services in rural areas affects all aspects of HIV prevention, counseling, treatment and care negatively, to the point of complete dearth in most areas. Pregnant women cannot access antenatal care, thus are not tested for HIV and hence do not receive PPTCT services that reduce the risk of transmission of the infection to their babies. Antiretroviral treatment is centralised in provincial capitals with limited access available in district centres or rural sites. HIV+ people living in rural areas have to travel to provincial capitals to access ARV treatment. Transport difficulties can lead to discontinuation of treatment, with serious consequences for the health of the individual as well as the development of resistant strains of HIV, which will require second line and salvage therapies, and further endanger the community if a resistant strain is transmitted. Poor quality water and unhygienic or non-existent toilets increase the risk of gastro-intestinal illness. Only 45% of rural households have access to a clean water source. People living with HIV, whose immune systems are already depressed, will be particularly susceptible to the ill effects of poor quality water.

WHAT CHAI HAS DONE IN PHASE I: Through partnership with NDoH, Goroka Hospital, and Eastern Highlands Provincial Health Services, CHAI PNG's Rural Initiative has successfully decentralised HIV testing, care, and treatment to all eight districts of Eastern Highlands Province. HIV service delivery is now seen as integral to standard patient care at Goroka General Hospital, as well as in all districts in the Province, whereas before Rural Initiative, HIV care was seen as a duty outside of normal patient care.

The access to HIV testing has expanded dramatically. The efforts made in VCT training of Health Care Workers as well as lay people, followed up with ample opportunity to practice the skills learned, has resulted in much higher numbers of VCT through Goroka Hospital, district sites, and rural outreach, answering a need of the community. Over 6,000 people have now been tested through the Rural Initiative's Health Fairs featuring VCT. Similarly, Provider Initiated Counselling and Testing (PICT) as distinct from VCT has contributed to the extensive uptake of PICT throughout Goroka Hospital and affiliated clinics, namely the Antenatal Clinic, Children's Medical and Outpatient, Labour Ward, Medical Ward and STI/HIV clinic.

CHAI PNG Phase I expansion of adult ART to the district level was staffed entirely by Provincial Health Services employees who had been trained in ART prescribing but had not utilised their skills. The approach has been an important national demonstration of optimising existing human resources within a province through coordination, mentorship and supervision; it holds important implications for sustainability.

With decentralisation, over 33% of all clients are now registered in district level facilities. The number of registered ARV patients has increased from 140 to over 1,200 with dramatic improvements in the quality of care: LTFU rates have been reduced from 65% to 15% among adult ART patients and 70% to 2% among PPTCT mothers. These results have prompted the NDoH to adopt the Rural Initiative as a best practice and national model for replication in other high prevalence provinces.

Efforts to expand HIV services to the district level has also resulted in needed basic infrastructure improvements to rural health facilities. This has produced important innovations in medical waste,

access to water, and solar power that are being adopted by Provincial Health Services for replication. Strengthening overall rural health systems are an essential part the Rural Initiative's response and will remain fundamental to the model.

CHAI has also worked with provincial and district partners to create the country's first network of District level ART providers. At the request of the Secretary for Health, CHAI has moved to replicate, in a limited fashion, the Rural Initiative in Southern Highlands Province, and worked with Mendi Hospital to establish an ART clinic with a fully functional Case Management system which now has over a 100 registered clients. The 2010 IRG report describes the Mendi Hospital as "a centre of excellence in treatment and care which sets a standard to which all provincial hospitals and district hospitals should aspire to strengthen health systems and scale up the quality of HIV, STI and TB services".

Highlighted from the AusAID-funded evaluation of CHAI PNG Phase I Rural Initiative:

There has been an increase in uptake of HIV testing through voluntary counselling and testing (VCT) and provider-initiated HIV counselling and testing (PICT) for STI patients and tuberculosis (TB) outpatients. In 2009, 90% of STI patients and 100% of TB outpatients in Rural Initiative sites received an HIV test. The comparative testing levels before Rural Initiative were 10% and 1% respectively for STI patients and TB outpatients.

Between 2007 and 2009:

- *The proportion of adults with advanced HIV infection on ART increased from 46% to 58%*
- *The percentage of people alive on ART 12 months after initiation increased from 73% to 86%*
- *The percentage of underweight adults who gained a significant amount of weight after initiating ART increased from 73% to 89%*
- *Patient survival 12 months after ART initiation is 93%*
- *The percentage of HIV positive pregnant women who receive ART for PPTCT increased from 26% to 98%*

PPTCT and Paediatric programs in Rural Initiative demonstrated improved clinical and social outcomes. Loss to follow-up of registered patients decreased from 74% in 2006 to 2% in 2009. In addition, the number of HIV+ children receiving care from health services in Eastern Highlands Province (EHP) increased from one patient in 2007 to 60 patients (35 on ART) in 2009.

CHAI has been pivotal in developing standardised clinical forms for HIV patient care and has piloted a new patient information database application using Microsoft Access, adopted for national implementation at the end of 2008. The system is user-friendly and provides reports that are useful for managers.

(Heywood, 2009)

CURRENT SITUATION AND FUTURE NEED

Challenges to deliver HIV services to the rural majority are vast. At present, infrastructure throughout most provincial hospitals and district facilities is inadequate. The main challenges at the district level are often maintenance, sanitation, and water supply. Human resources, specifically, the recruitment and retention of trained health staff in rural areas are also barriers to scale-up. At the national level, trainings

to certify ART prescribers are too infrequent, often due to the delays associated with the NDoH's funds through the Health Sector Improvement Program (HSIP). In addition, patients themselves keep most medical records; this is not appropriate for the care and treatment of a serious chronic disease such as HIV.

On a positive note, the decentralisation of HIV services provides an excellent opportunity to improve the quality of rural primary health systems. To effectively strengthen HIV case detection, TB, STI, and ANC services must also be improved. It is also essential to provide adequate staffing, supervision, mentorship, and training to district level health workers to enable them to care for HIV patients adequately. Such improvements can result in improved uptake of services, better coordination between provincial and district level, enhanced reporting and data collection, as well as high quality treatment outcomes. Through the Rural Initiative Phase I Eastern Highlands pilot sites, CHAI has demonstrated that how a centralisation of certain core functions at the provincial level (e.g., record keeping and distribution of test kits) and decentralization of clinical services to districts, improves the basic continuum of rural primary health services.

The NHS Concept Paper proposes that decentralisation of HIV treatment and care programs to district-based health facilities and health centres must be a priority in the new national strategic plan. The paper also proposes the expansion of the models of comprehensive care provided by CHAI through the Rural Initiative Program. This model provides integrated management of STI, HIV and TB care and treatment services.

Overall Evaluation of the Program

CHAI PNG Phase 1 catalysed a range of improvements in the HIV treatment, care and support response in PNG in the last three years. All aspects of the CHAI PNG Phase I program – Supply Chain Management, Laboratory Support, PPTCT and Paediatrics, and the Rural Initiative – contributed significantly to the PNG national response.

The Independent Evaluation (Heywood 2009 p.23) found that Clinton Foundation was “...a well managed project that has created enthusiasm and ownership in many areas. It has been exemplary in the way it has carefully considered the pace of rollout of all program areas, and has taken time to reflect and analyse many elements of it. Its commitment to building local capacity has been outstanding.”

Apart from the AusAID commissioned evaluation, there were no additional external evaluations of the CHAI program. Quarterly and annual metrics are, however, routinely submitted to CHAI Regional and Executive Management to monitor and evaluate the efficacy of CHAI programs in PNG.

2.3 Lessons Learnt from CHAI Phase I

Both the Independent Evaluation (Heywood 2009) and ongoing program implementation of the CHAI PNG Phase I have generated a number of lessons which have informed the design of CHAI PNG Phase II program.

Laboratory

- **Early Infant Diagnosis and Treatment:** It is critical that the roll out of early infant diagnosis nationwide should be accompanied by a complementary system of ART and opportunistic infections (OI) for infants diagnosed with HIV and support for adherence and retention of infants in the treatment program. The credibility of the EID program would be damaged if parents do not see benefits for the health of their babies.

- **Reliable & Consistent CD4 Testing:** CD4 testing technology makes it possible to monitor the immune status of patients on ART and assess HIV+ patients who are not yet receiving ART for enrolment in a treatment program. However since the introduction of BD Biosciences CD4 machines in PNG, there have been frequent breakdowns of the machines and it has been difficult to get consistent and reliable CD4 testing capability. Between 25-50% of all the machines have been out of operation at any one time. The absence of trained technicians in the country who can repair the CD4+ machines when they break down has proved to be a major challenge for the laboratory program. Given the challenges associated with using the BD Biosciences CD4 machines, CHAI commenced an evaluation of new and alternative technologies to support and strengthen the current CD4 testing program. This includes the validation of one or more alternative CD4 testing platforms including a manual CD4 assay and point of care CD4 testing (Clinton Health Access Initiative 2009). When the validation of the manual and POC CD4 tests are complete, they can be included in the CD4 testing program. This will enhance CD4 testing in two ways. Firstly, it will provide an alternative to the BD Biosciences machines when they break down. Secondly, POC and manual tests can be used at district health centre levels thus making access to CD4 testing greater than it is at present with the BD Biosciences machines which are in regional laboratories and some provincial hospital laboratories.

PPTCT and Paediatrics

- **Enhancing EID:** HIV positive children are largely identified in the inpatient wards rather than in outpatient clinics; counselling and testing training for both outpatient and inpatient paediatric staff supports earlier diagnosis.

- **Case Management reduces loss to follow-up for mothers & infants:** Loss to follow-up is a serious impediment to PPTCT/paediatric HIV cases; a strong Case Management system, similar to the approach used in the Rural Initiative program contributes to reduce loss to follow-up and increases the retention on patients. The Case Management approach means that mother and infant (and sometimes father) are managed together in a family model with treatment being provided for the mother in the paediatric treatment clinic.

Rural Initiative

- **Facility-specific tailored approach:** As described by the Independent Evaluation team, a critical factor in the success of the Rural Initiative to date is *“the step-wise, flexible, facility-specific, appropriately paced and tailored approach of the CHAI to its implementation”* (Heywood 2009 p.26).

The design team found that this approach was characterised by CHAI consulting with Department of Health staff working in the specific locations to identify bottlenecks and obstacles and providing the specific resources needed for quality implementation in each setting. These included human resources,

infrastructure, health system processes, training, mentoring and supervision. This systematic approach to quality service provision has been a feature of all four component areas of Phase I.

• **Strong commitment of provincial government and health administration:** Another important factor for success of the Rural Initiative in EHP, identified in the evaluation and confirmed by the design team, was the strong support of the provincial governor as well as the commitment of the provincial government and hospital administration to reforming the health sector and improving access and quality of health services to rural population.

The EHP government has committed to establishing a Provincial Health Authority (PHA), a unified authority that will manage all health services, hospital and rural services, and therefore all health workers in the province. The Rural Initiative Program provided an excellent opportunity for a partnership between the provincial government, hospital administration and CHAI to realise the goal of the PHA and improve HIV diagnosis, treatment and care services in the province by strengthening primary health care.

Replication of the Rural Initiative in Western Highlands Province (as proposed for Phase II) will be considerably more challenging than the Phase I experience of Eastern Highlands for the following three reasons:

- Parallel systems for HIV Care and Treatment currently exist between Catholic Health Services and Mt. Hagen's Tinninga Clinic
- Patient levels are extremely high (over 1,200 registered patients at Tinninga, over 1,000 patients also at Catholic Health Services, with levels of duplication of patients registered)
- Human Resource constraints are significant, particularly given Mt. Hagen's position as a Regional Hospital that also serves populations from Chimbu, Enga, and Southern Highlands Provinces

However, there is great potential for success in Western Highlands Province given extremely strong leadership at the executive management-level of the hospital and a strong desire to undertake the Rural Initiative by both hospital and provincial health staff. Indeed, officials from Western Highlands approached CHAI in early 2009 requesting CHAI to provide technical assistance in replication. Such ground level interest and support will be key to the absorptive capacity of the replication effort.

2.4 Rationale for AusAID support

CHAI's first phase has made a considerable contribution to the health outcomes for people with HIV in PNG. The CHAI PNG Phase II design is a promising program that addresses key development objectives of the Australian aid program, as follows:

- As the Independent Evaluation noted, CHAI's program supports the priority given to HIV in PNG by the Australian government development program. A strengthened, coordinated, and effective response to the HIV epidemic is one of four pillars of Australia's Development Partnership with Papua New Guinea 2006-2010.
- CHAI's work with the NDoH within existing systems and policy frameworks is sensitive to country-led priorities and supports the principles of the Paris Declaration on Aid Effectiveness and Accra Agenda for Action.
- CHAI Phase II is aligned with the priorities of Australia's international development strategy for

HIV, including the following:

- *strengthening capacity to scale up by supporting countries to strengthen systems to overcome barriers to universal access to treatment*
- *optimising the role of health services within the HIV response including support for PNG to improve HIV treatment and care.*

More detailed contribution of the CHAI PNG Phase II program to AusAID's development objectives are shown in Table 1 below.

Table 1: Relationship between AusAID's development objectives and CHAI PNG Phase II Design

AusAID Development Objectives	CHAI PNG Phase II Design Contribution
Working in partnership with government and within government systems (PARIS AND ACCRA COMMITMENTS)	<i>Exploring new ways of working with the Department of Health at national and sub national level</i>
Improving service delivery to the poor (ODE'S 2007 ANNUAL REVIEW OF DEVELOPMENT EFFECTIVENESS)	<i>Developing a model to extend services to rural areas and providing support to PMGH and urban clinics to support the urban poor</i>
Strengthening capacity to scale up by supporting countries to strengthen systems to overcome barriers to universal access to treatment (AUSTRALIA'S INTERNATIONAL HIV STRATEGY, 2009)	<i>Training and mentoring local service providers. Encouraging the development of innovative technical and structural solutions to long standing health system issues.</i>
Optimising the role of health services by promoting stronger linkages between HIV and services for tuberculosis, maternal child health, sexual and reproductive health (AUSTRALIA'S INTERNATIONAL HIV STRATEGY, 2009)	<i>The whole of Rural Initiative model: Integrating PPTCT and Paediatric ART into MCH, linking tuberculosis testing services with HIV, ensuring mothers in ANC receive STI testing, preventing malaria in HIV positive adults and children.</i>
Implementing comprehensive responses — including adherence constraints — that include treatment and care in PNG (AUSTRALIA'S INTERNATIONAL HIV STRATEGY, 2009)	<i>Addressing adherence through strengthening health systems and supply chains, education and support for clients, and lowering costs associated with treatment as well as training and support for health professionals.</i>
To ... care for those infected ... and strengthen national capacity to respond. (NATIONAL STRATEGIC PLAN HIV AND AIDS 2006-2010 / AUSTRALIA PNG HIV / AIDS PROGRAM GOAL)	<i>Improving coordination between key players in the area of HIV related testing and treatment at central and provincial level. Support to staffing and infrastructure at all levels.</i>

3. PROGRAM DESCRIPTION

3.1 Introduction

The CHAI Phase II Program is designed to address the issues identified above and solidify the gains made in Phase I. The Program is in alignment with the new draft *PNG National HIV Strategy (2011-2015)*. In addition, the design aligns with NDoH's *Minimum Standards for HIV and AIDS Services and Activities in Papua New Guinea (2007)* and seeks to use its resources to implement the Minimum Standards at the program sites.

CHAI Phase II is a five-year program designed for implementation in two stages. Stage 1 will be implemented from January 2011 to December 2012. An independent progress review will be undertaken in 2012 to inform the implementation of Stage 2 of the Program to be implemented from January 2013 to December 2015. The Progress Review is not intended as a full-scale evaluation. Rather, it is an opportunity to make mid-term programmatic adjustments to optimise achievement of the five-year program outcomes.

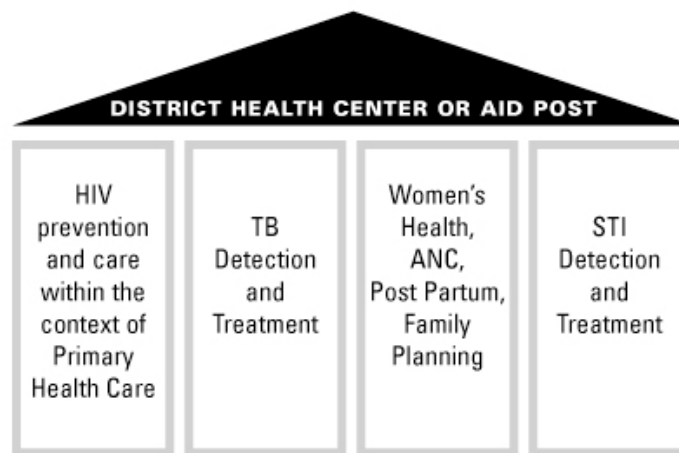
The goal, purpose, component objectives, outputs and targets are described for the five-year program and presented in the Log frame shown in Annex 1. For each component, the main activities that will be implemented during the Stage 1 of the program are also described. A detailed workplan for Stage 1 is presented in Annex 2. The expected achievements at the end of Stage 2 are also described below for each component.

3.2 CHAI Phase II Approach: Using HIV Service Delivery to Strengthen Health Systems

In Phase II, CHAI PNG will continue the Phase I strategy of working within the Public Health system, from central to aid post levels. CHAI's model does not remove skilled workers from the public health system. By working directly with public service providers and providing on the job training and mentoring, CHAI builds capacity thus contributing to sustainability.

A central tenet of CHAI's engagement in health facility based HIV work, is the concept that through strengthening STI, TB, and Antenatal Services, HIV detection and treatment will be improved. Based on the "Four Pillars Concept" developed by Partners in Health, an internationally recognized organization in the area of health care in resource limited settings, HIV resources not only improve the ability to actively test and treat for HIV, they are also used to strengthen basic primary health care. Such an approach to health systems strengthening is essential in PNG. In CHAI's experience, particularly in the rural setting, more patients are likely to be detected through TB, STI, or ANC services than through voluntary counselling testing.

Figure 4: Four Pillars of HIV & Health Systems Strengthening



Adapted from *Partners in Health's Community Based Guide to HIV in Resource Poor Settings*

The overall program design for CHAI Phase II works within the framework of GoPNG's policies and reforms to improve health outcomes for Papua New Guineans. Papua New Guinea's major health reform platform – the National Health Plan, 2011-2020 – actually provides the basis for the design and the direction of the program (see Table 2 below). CHAI's Phase II goal: "Reduced transmission of HIV and other STIs and impact on individuals, families and communities in selected localities minimised" is the same as that for the National HIV Strategy, a component of the Health Plan. Phase II is most closely linked to Key Response Area 6 of the Plan, which focuses on reducing the burden of communicable diseases. However, CHAI's linkages with much of the Health Plan reforms and policies can be summarized by looking at CHAI Phase II's alignment within the larger context of health systems strengthening. In broad strokes, the Health Plan aims to improve service delivery, strengthen partnerships and coordination with stakeholders, strengthen health systems (workforce, information, infrastructure, medical products, and leadership & governance), improving childhood and maternal survival, reducing the burden of communicable diseases, and promoting healthy lifestyles. Table 2 below illustrates the intimate way in which CHAI's Phase II components and their activities coincide with these larger Health Plan focuses and objectives.

In addition, CHAI reporting systems are linked to GoPNG through Provincial and District mechanisms. The indicators used in the M&E framework are derived from the GoPNG national health indicators while the data flow and reporting arrangements are described in full in the M & E section of the design.

First and foremost, CHAI PNG will continue to ensure appropriate coordination with the National Department of Health through joint planning and review processes that make certain that CHAI programs are strategically aligned with the priorities of the Department and the overall National HIV/AIDS Response. This includes submission of Annual Work plans, Quality at Implementation reports and other program related monitoring and evaluation efforts to the Principal Advisor on STI and HIV and AIDS. In addition to participation in the Development Partners Forum, the Country Coordinating Mechanism (observer status) and Technical Working Group of the Global Fund, CHAI Senior Management will meet with the Principal Advisor at least monthly. Moreover, the leadership of CHAI PNG will continue to consult with the Minister for Health and HIV/AIDS, Secretary of Health, Deputy Secretary for Health.

At the Provincial level (in both Eastern and Western Highland Provinces), CHAI Rural Initiative activities will be coordinated through a steering committee comprised of the Chief Executive Officer or Director of Medical Services of the respective Provincial Hospital, Director (or Deputy Director) of Provincial Health Services, and a CHAI representative. This committee will also function as a subcommittee of the Provincial AIDS Council focused on Care, Counselling, and Treatment.

Table 2: CHAI Phase II and Alignment with the National Health Plan 2011-2020

National Health Plan 2011 – 2020 KRA		Alignment with CHAI Phase II
KRA 1	Improve service delivery	Component 3: PPTCT and Paediatric ART, Component 4: Rural Initiative Program both work to improve access, coverage, quality and services, and Component 5: Operational Research will document and disseminate best practices that can improve services
KRA 2	Strengthen partnerships and coordination with Stakeholders	CHAI works through partners in each of the programs component areas: Component 1: SCM – key partner is the NDoH Logistics Unit Component 2: Laboratory – Central Public Health Laboratory and Goroka Hospital Component 3: PPTCT and Paediatric ART – major paediatric facilities Component 4: provincial and district level facilities, Provincial Health
KRA 3	Strengthen Health Systems	All program components will be contributing to strengthening an aspect of the health system:
	• Health Workforce	Each of the program components includes capacity building of counterparts. CHAI will train logistics officers, laboratory technicians, nurses, midwives, health extension officers medical officers, and paediatricians.
	• Information (ICT)	All program components will be contributing to strengthening ICT (e.g., SCM will fund logistics information system, Rural Initiative will pilot innovative technology to better serve rural populations, Laboratory will establish new viral load and POC CD4 HIV monitoring tools)
	• Infrastructure	Decentralisation of services in rural areas will use HIV resources as a vehicle to support necessary improvements in facility infrastructure, logistics, greater use of VCT/PICT in primary care and to strengthen existing, TB, STI, and MCH services at the District and sub District Levels based on the <i>Four Pillars Approach</i> illustrated below. The Rural Initiative component will refurbish district health centres and aid posts in EHP as necessary to ensure that the comprehensive package of services appropriate for each service delivery level can be provided. The PPTCT and paediatric ART component will upgrade the facilities of Mount Hagen and Angau Hospital antenatal clinics to expand and enhance the quality of the services provided
	• Medical products, vaccines and technologies	The SCM component will work with NDoH and other stakeholders to ensure continuous supply of drugs and other HIV commodities at service delivery sites. Strengthening the supply chain and logistics has implications for the procurement of drugs generally through better forecasting, integration of consumption data by improving capacity of NDoH staff and standardising processes. The support for laboratory strengthening will improve human resource capacity, facilities and management for all laboratory services not just HIV. For example, the DNA PCR technology introduced for the EID program can also be used for surveillance of outbreaks of other diseases such as H1N1, dengue and influenza. Laboratory will also establish new viral load and POC CD4 technologies for better clinical monitoring of HIV+ patients
• Leadership and governance	Rural Initiative component support leadership and governance of the health system at provincial and district levels	
KRA 4	Improve child survival	Components 2, 3, and 4 all contribute to improving child survival. • Early infant diagnosis detects HIV in exposed infants within weeks of birth and early infant treatment improves the chances of survival. • PPTCT for pregnant women identifies HIV+ women and provides ARV prophylaxis which reduces the risk of transmission to infants. • Antenatal, delivery and postnatal care, including nutritional support provided through the rural initiative program and the well baby clinics enhance health outcomes for both mothers and infants
KRA 5	Improve Maternal Health	Rural Initiative and the Well Baby Clinic in Port Moresby, and its planned extension to Mt Hagen and Lae will model the integration of HIV treatment into MCH. All mothers receiving PPTCT will need to first attend ANC. All mothers coming for ANC are tested for gonorrhoea and syphilis. HIV+ mothers are also provided with treated bed nets to protect against malaria, and tested for TB.
KRA 6	Reduce the burden of communicable diseases	Rural Initiative will undertake laboratory testing of all HIV patients for TB and provide treatment. All infants are supplied with insecticide treated mosquito nets to reduce the risk of malaria infection. Clients with poor quality water will be provided with rain water tanks in order to improve access to clean water and reduce gastrointestinal infections
KRA 7	Promote healthy lifestyles	Rural Initiative and PPTCT and Paediatric ART components will provide nutritional advice and promote healthier lifestyle choices

3.3 Program Goal and Purpose

Program Goal

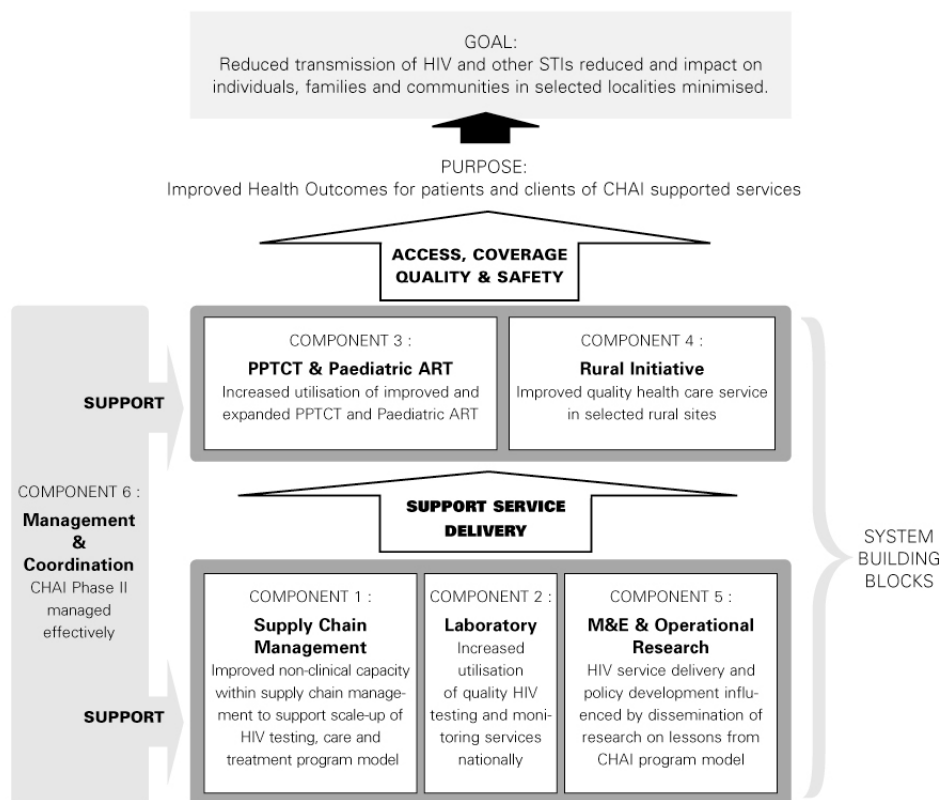
The goal of CHAI PNG Phase II Program is: “**Reduced transmission of HIV and other STIs and impact on individuals, families and communities in selected localities minimised**”. This is a developmental (long term) goal and is the same as that for the National HIV response. Hence CHAI is not expected to achieve the goal on its own, but will be evaluated on its contribution to the achievement of the NHS Goal.

Program Purpose

The medium term purpose of the Phase II program is “**Improved health outcomes for patients and clients of CHAI-supported services**”. The Program purpose aligns with the *Key Response Area 7 of the National Health Plan 2010-2020* (Papua New Guinea National Department of Health 2010) - “reduce the burden of communicable diseases (STI, HIV, malaria and TB)”. The project aims to achieve the following results by the end of Stage 2:

- Survival or Cohort Retention rate of adults, adolescents and children with HIV who are on ART will have increased from 70% in 2011 to 85% in 2015;
- TB death rate among HIV patients of CHAI-supported health facilities will be lower than the 2010 rate (baseline will be determined in 2011)
- % of ART patients in CHAI-supported Rural Initiative sites with body mass increase (BMI) greater than 1 will have increased from 60% in 2011 to 80%.
- Loss to follow-up rates among PPTCT, adult and paediatric ART patients in Rural Initiative sites and the PMGH Well Baby Centre will be reduced from 20% in 2011 to 15%

Figure 5: Structure of CHAI PNG Phase II Goal:

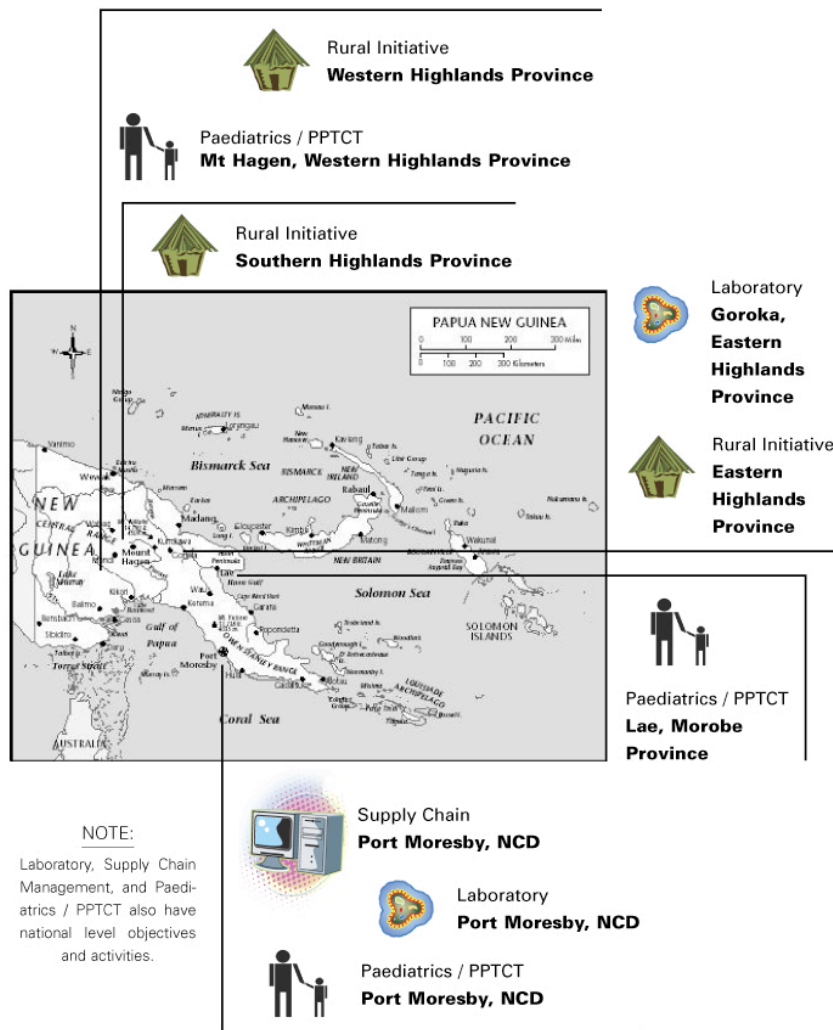


3.4 Program Components

CHAI PNG Phase II program has six components, shown in Figure 5 above. The logic of the program is that CHAI's activities in Components 1 and 2 will strengthen the capacity of NDoH supply chain and logistics and laboratory services to provide timely and quality support services to PPTCT and paediatric and adult ART in CHAI-supported urban and rural health facilities. The activities of Component 3 are designed to improve the coverage and quality of NDoH's PPTCT and paediatric ART services in CHAI-supported urban and rural sites. CHAI's Component 4 activities will strengthen the capacity of sub-provincial levels (districts and aid posts) to provide quality PPTCT and paediatric and adult ARV treatment. CHAI's Component 5 research and monitoring and evaluation activities will contribute to the application of lessons-learned to the quality-improvement of CHAI-supported services and to the scale-up of the CHAI capacity-development model in other PNG provinces. In short, a well managed CHAI program will lead to improved health outcomes for patients and clients of CHAI-supported services which will in turn contribute to national goal of reducing HIV and STI transmission and impact on affected individuals, families and communities.

A map of PNG showing in which geographical locations the different components of the program will be implemented is presented in Figure 6 below.

Figure 6: Clinton Health Access Initiative PNG Site Map



Component 1: Supply Chain Management

Component 1 Objective: *Improved non-clinical capacity within supply chain management to support scale-up of HIV testing, care and treatment*

Key Outputs

- 1.1 FORECASTING, PROCUREMENT AND DISTRIBUTION: Improved forecasting, procurement, and distribution capacity through improved data integrity and data driven decision-making
- 1.2 NATIONAL LOGISTICS STRATEGY: Standardized National Logistics Strategy adopted by NDoH to roll out to provinces

The Supply Chain Management Component will strengthen the non-clinical capacity to support scale-up of HIV testing, care and treatment through coordinated work with NDoH's Logistics Unit. The program will build on the success achieved in introducing and institutionalising paediatric ARVs into the NDoH procurement process, helping to develop better forecasting methods, creating auditing tools and reports and ensuring no ARV stock outs happen at the national level. With the end of the UNITAID agreement in 2010 through which CHAI obtained paediatric ART and commodities for PNG, CHAI will assist NDoH to combine the procurement of paediatric and adult ARVs and commodities, utilising UNICEF as a procurement agent. In Phase II the Program will work to strengthen knowledge and skills in the areas of forecasting, procurement and distribution at central level, as well as working to eliminate waste of drugs and perishable commodities.

Stage 1: Component 1 Results after 2 years

In the first two years of the program, CHAI will establish and use a Logistics Management Information System that quantifies demand for HIV commodities by better tracking of incoming and outgoing orders and identifying waste-reduction and cost effectiveness strategies for the procurement. The CHAI Country Analyst will work with NDoH to develop a standard national logistics strategy for all HIV commodities (including paediatric ARVs) which will be rolled out to provinces in subsequent years.

Stage 1: Component 1 Key Activities

The key activities which will be undertaken under the supervision of the CHAI Country analyst to achieve these results include:

- Establish and use Logistics Management Information System (LMIS) to quantify demand HIV medications and other commodities
- Track incoming and outgoing orders in LMIS
- Provide AMS sites with fax and telecommunications equipment to ensure that they are able to send and receive orders from service delivery sites.
- Write standard operating procedures for international tendering
- Recruit and train an AMS clerk and Logistics Officer to work with NDoH
- Prepare annual reports about the supply chain management process for all stakeholders.

Stages 1 and 2: Component 1 Results after 5 years

By improving the forecasting, procurement and distribution system, CHAI will help NDoH to:

- Reduce emergency orders placed by 10% annually
- Increase the % of orders placed in the Area Medical Services that are met in 7 days from 40% in 2011 to 70% in 2015
- Meet 90% of reported need for first line and second line paediatric ARVs annually
- Meet 90% of reported need for EID commodities met annually.

Component 2: Laboratory Support

Component 2 Objective: *Increased utilisation of quality HIV testing and monitoring services nationally*

Key Outputs

- 2.1 EID: Expanded and improved Early Infant Diagnosis of HIV
- 2.2 QUALITY ASSURANCE: Robust quality assurance system established and implemented
- 2.3 HIV MONITORING: A system for monitoring HIV+ patients developed and implemented

The Laboratory Support component aims to strengthen and increase access to HIV testing and monitoring. The program will build on the impressive achievements in establishing early infant diagnosis of HIV and, in collaboration with others, validating a two rapid test algorithm that will enable point of care confirmation of HIV test results. In Phase II, the program aims to extend the coverage of the EID program nationwide, testing more children born to HIV+ diagnosed mothers as early as 6 weeks and linking those infected with paediatric ART programs. Secondly, the program will support the continued roll out of the rapid test point-of-care HIV test and establish a robust quality assurance system for the algorithm. The third key outcome for this component is to strengthen the monitoring of patients on ART using CD4 and viral load testing.

Stage 1: Component 2 Results after 2 years

CHAI will expand access to EID for 61 clinical sites in nine high burden provinces with the two PCR laboratories (CPHL and the Goroka laboratories) conducting approximately 500 tests per year. The Laboratory Program will also roll out the two rapid test algorithm for HIV to 6 provinces (3 provinces per year). The national external quality assurance system for HIV testing (including DNA PCR) and HIV serology will be further strengthened. The current system for monitoring the health of people living with HIV through CD4+ will be further strengthened by introducing the use of point-of-care (POC) CD4+ testing and viral load testing. By the end of Stage 1, 500 viral load tests would have been conducted.

Stage 1: Component 2 Key Activities

The key activities that will undertaken under the supervision of the CHAI Laboratory Adviser to achieve these results include:

- The second PCR testing site in the Highlands established at the end of Phase I will be maintained in addition to CPHL.
- Recruit two laboratory technicians, one for each PCR testing site, to meet the expected increased demand for EID tests.
- In collaboration the Director of CPHL, the CHAI Laboratory Adviser will recruit a manager for national EID capacity building program.
- Train 50 health care workers in the collection of DBS for EID
- Establish and implement a quality assessment system for both CPHL and Goroka Laboratory with expected test accuracy scores of 95%.
- Recruit, train and supervise a national external quality assurance system for HIV serology will be continued. CHAI will recruit, train and supervise staff to coordinate the Laboratory Quality assurance Program.
- Ensure regular servicing of CD4 BD machines
- Provide annual refresher training and supervision for laboratories with CD4 machines.
- Pilot the use of POC CD4 technology in five provinces.
- Establish viral load testing at CPHL and Goroka laboratories.
- Recruit three laboratory technicians to boost the microbiology, biochemistry and haematology capacity in CPHL and Goroka laboratories.

Stages 1 & 2: Component 2 Results after 5 years

Strengthening the laboratory services will increase utilisation of and quality of HIV testing and monitoring services nationally. Key results expected after five years will be:

- The number of infants that receive EID tests will increase from 1,000 in 2011 to 2,000 in 2015
- The number of HIV POC testing will increase from 20,000 in 2011 to 50,000 in 2015
- The number of HIV+ people receiving CD4 tests will increase from 12,000 to 15,000

Component 3: Prevention of Parent to Child Transmission and Paediatric ART

Component 3 Objective: *Increased service utilisation of improved and expanded PPTCT and paediatric ART*

Key Outputs

- 3.1 ROLLOUT: Increased number of sites providing PPTCT and paediatric ART services
- 3.2 IMPROVED PPTCT: Improved quality of PPTCT services at high prevalence sites
- 3.3 IMPROVED PAEDIATRICS: Improved quality of clinical care for HIV exposed and infected children in CHAI-supported sites

The PPTCT and Paediatric ART program will work to strengthen and enhance PPTCT programs and expand paediatric ART in Phase II. The excellent work done at PMGH Well-Baby Centre in integrating PPTCT and paediatric HIV Case Management with other Well Baby services will be extended to other peri-urban clinics in the National Capital District (NCD) and to new sites in Western Highlands Province (Mt. Hagen) and Morobe Province (Lae). The availability of EID has bolstered and complimented the paediatric ART program in the past year. It is expected that as EID becomes more widely utilised, the number of children with HIV infection detected will increase, leading to an increase in the paediatric ART program. The CHAI Clinical Director for PPTCT and Paediatrics will play an important role in improving the clinical skills of paediatricians and physicians around the country providing care for children with HIV, through update workshops and trainings. In Phase II the process of establishing the PMGH Well Baby Clinic as a centre of excellence for PPTCT and paediatric ART will continue by focusing on a concerted structured program to include men in the antenatal care and in treatment for the infants. Indeed the strategy of providing facilities to enhance male involvement in PPTCT will be a common feature of the PPTCT and Paediatric ART program in all the sites where CHAI will be providing these services.

Stage 1: Component 3 Results after 2 years

In Stage 1 of the program, two new sites for integrated PPTCT and paediatric services, similar the PMGH Well-Baby Centre will be established in Mt Hagen and Morobe. The clinical case management system established at the PMGH Well-Baby Centre in Phase that was so successful in reducing loss to follow up for infants born to HIV+ women will be implemented in all the new sites. As previously mentioned under Component 2, EID and EIT will be expanded to high HIV burden sites in the country. The capacity and skills of MCH, PPTCT and paediatric ART providers will be strengthened with a targeted training and mentoring program overseen by the CHA Clinical Director for PPTCT and Paediatrics and the Clinical Director of Rural Initiative Program. Each integrated PPTCT/paediatric HIV site will have in place a system for assessing the risk of domestic violence for women who test HIV+, provide supportive counselling and other social services and specific strategies to involve male partners.

Stage 1: Component 3 Activities

The key activities that will be undertaken under the supervision of the CHAI Clinical Director for PPTCT and Paediatrics to achieve these results include:

- Continue to provide PPTCT and paediatric ART services at already established sites at the Port Moresby General Hospital Well Baby Clinic and Goroka Hospital.
- In collaboration with provincial health directors in Lae and Mt Hagen, identify two new health facilities for provision of PPTCT and paediatric ART services.
- Assess readiness of the new sites for service provision and undertake necessary infrastructure improvements as per Minimum Standards approved by NDoH.

- Recruit, train and deploy 3 PPTCT and paediatric ART positions to each of the two new sites.
- Develop and disseminate standard operating protocols (SOPs) for synergising patient flow in ANC clinic and child health clinics, procedures in labour wards and referral systems to ensure continuum of care and deliver MCH activities as a package including HIV.
- In collaboration with other stakeholders, develop and implement a training plan for enhancing technical and operational skills for PPTCT among MCH service providers.
- Develop and implement a supportive mentoring system for continuous skill building among health care workers in PMGH, Goroka, Mt. Hagen and Lae PPTCT and Paediatric ART sites.
- Conduct assessment of the risk of domestic violence for women who test HIV+ and provide supportive counselling and other social services as necessary.
- Develop and implement strategies to increase the participation of male partners in the testing and counselling process in each site.
- Facilitate regular coordination meetings of MCH, PPTCT and Paediatric ART and adult ART service providers at provincial and national levels
- CHAI will also support the national PPTCT and paediatric ART program by working with other stakeholders to develop case management tools and policies for use in the whole country.
- Conduct one update meeting per year with PPTCT and Paediatric ART practitioners from four sites.

Stages 1 & 2: Component 3 Results after 5 years

It is expected that the number of people using the improved PPTCT and paediatric ART services provided through CHAI will increase over 5 years. Key measurable results are:

- The percentage of HIV+ pregnant women at CHAI-supported sites who receive ARV to reduce the risk of mother-to-child transmission (UNGASS Indicator #5) will increase from about 10% in 2011 to 50% or more in 2015.
- Percentage of children receiving early infant treatment as a result of the revised of treatment guidelines being followed increases from 10% in 2011 to 35% in 2015
- The percentage of male partners of pregnant women being tested in CHAI-supported PPTCT sites increases from 10% in 2011 to 30% in 2015.

Component 4: Rural Initiative Program

Component 4 Objective: *Increased service utilisation of improved system for quality HIV testing, care and treatment in selected rural localities*

Key Outputs

- 4.1 RURAL HEALTH CARE SERVICES: Improved quality Health Care Service (HCS) in selected RI sites
- 4.2 LINKAGES: Increased linkages across continuum of care in selected RI sites
- 4.3 ADHERENCE AND RETENTION: Increased adherence and retention for children, adolescents and adult patients in selected RI sites
- 4.4 PROVINCIAL LABORATORIES: Improved laboratory quality and scope of services in selected RI sites
- 4.5 PLWHA AND VILLAGE HEALTH WORKER PROGRAMS: Programs engaging people living with HIV as expert patients, and parent-to-parent counsellors, village patient monitoring by trained laypeople including PLWHA and livelihood enhancement for ART patients established in selected RI sites
- 4.6 NEW PRODUCTS: Innovative products and systems developed or discovered, and utilised to improve rural health services and home based self-care in selected RI sites

The objective of the Rural Initiative Program is to implement a system of quality HIV testing, care and treatment for the rural majority in PNG. Although the model has not been fully implemented (i.e., patient monitoring by trained lay village health workers is not rolled-out as yet), the pilot RI program in EHP has demonstrated impressive improvements in HIV testing for STI and TB patients and in the number of people in rural areas using VCT services. There have been equally impressive improvements in adult care and treatment with increased numbers of HIV+ adult male and females registered with the health care services, massive reduction in the loss to follow-up and improvements in BMI of those on ART. These improvements are due primarily to the Case Management system piloted in the program.

Stage 1: Component 4 Results after 2 years

Rural Initiative in EHP

The underlying principle for the Rural Initiative program is continuum of care for patients. CHAI's Case Management approach ensures that all the different service providers – VCT sites, ANC sites, laboratory, TB, STI clinic, and community – are linked and the patient does not fall through the cracks. The approach has worked to reduce loss to follow-up in Phase I.

In Stage 1, of the Phase II program, the Rural Initiative Program will:

- Continue to decentralise the provision of integrated services to each of the eight districts in EHP and aim to limit the percent of adults, adolescents and children with HIV and known to be on treatment that are lost to follow-up to less than 15%.
- Conduct at least 20 health fairs featuring VCT with hospital outreach team and providing HIV testing to 1200 people
- Counsel at least 300 couples per year in sexual and reproductive health and infant care in antenatal settings
- In collaboration with Mini Vava (the HIV+ organisation in EHP), establish an “expert patient” program that places trained HIV+ patients with Case Managers as counsellors of patients newly diagnosed with HIV+
- Continue the micro-finance program started in Phase 1, and provide at least 32 people living with and/or affected by HIV with appropriate entrepreneurial and cooperative loans.
- Establish an educational support program, providing 30 selected children or adolescents living with or affected by HIV with school fees
- Develop or provide safer drinking water solutions for at least 200 patients identified to be most at

risk of poor quality drinking.

- Strengthen laboratory capacity by establishing a Laboratory Management Fellows Program, training 3 to 5 fellows per year.

Rural Initiative in WHP and SHP

The RI Program will be expanded to WHP, with a heavy emphasis on systematically strengthening the testing, care, treatment and coordination mechanisms at Mt. Hagen Hospital before expansion to the district and sub-centre levels. The experience of implementing the RI in EHP will be beneficial in the expansion to WHP. Phase II will also see a limited expansion of the RI program's ongoing work in SHP, primarily through continued support to Mendi Hospital and one district level site.

In Stage 1, the Rural Initiative program in WHP and SHP will:

- Increase district level sites offering antenatal care package in WHP and SHP by 10
- Establish Case Management and aim to reduce loss to follow up for HIV patients on ART to less than 15%

Stage 1: Component 4 Key Activities

The key activities that will be undertaken under the supervision of the Director and Clinical Director of the Rural Initiative Program to achieve these results include:

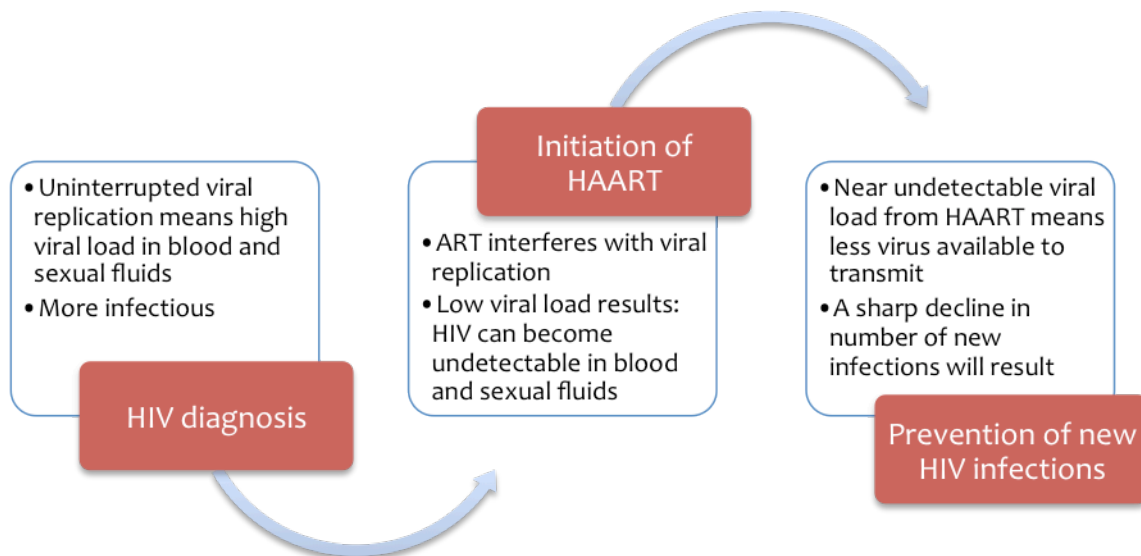
- Assess infrastructure of selected rural sites providing HIV services for sanitation, water, electricity and general space to meet basic needs of an operational clinic and Upgrade sites to agreed operational standard
- Develop Case Management training curriculum
- Train new care teams in EHP districts, WHP and SHP hospitals that will be providing integrated HIV treatment and care services for the first time using the Case Management curriculum.
- Provide refresher training for established care teams at Goroka Hospital and districts that began providing integrated treatment and care services in Phase 1.
- Sponsor and/or facilitate IMAI, PPTCT Paediatric ART, provider-initiated counselling and testing training, VCT, expert client and Village Health Worker (wasman) training, followed by mentorship and supervision for newly trained HCWs.
- Operate high quality adult ART clinics in each of the eight Districts of EHP.
- Offer full complement of PPTCT services including testing, ART and delivery at two EHP District level health facilities
- Offer Basic antenatal testing package in at least one District site in SHP and WHP and all EHP Districts
- Conduct Staying Negative Couples Counselling Program with HIV- mothers and their partners through the antenatal setting
- Conduct Health Fairs featuring VCT with Hospital Rural Outreach Team in RI sites
- Assess Provincial Hospital capacity for HIV-related diagnostics and microbiology and implement improvements
- Train 3-5 new Fellows through RI Lab Management Fellows Program
- Upgrade the laboratories in Western Highlands and Southern Highlands Hospitals
- Conduct Expert Patient Trainings for members of Mini Vava
- Continue micro-finance program to provide appropriate entrepreneurial and cooperative loans to people living with and/or affected by HIV
- Provide school fees for selected children or adolescents living with or affected by HIV, with priority given to female ART patients
- Safer drinking water solutions provided for those identified most at risk of quality poor drinking water
- Maintain linkages to programs such as PNG Australia Sexual Health Improvement Program

(PASHIP), which run STI treatment clinics in at least two Rural Initiative sites

- Provide patients with 24 condoms at each review visit.

Stage 1 & 2: Component 4 Results after 5 years

By decentralising the provision of health services to the district and sub-district levels, the Rural Initiative Program aims to increase the utilisation of quality HIV testing, prevention, treatment and care services. The Rural Initiative Program also contributes to prevention by reduction of viral load in those taking up ART, which will decrease HIV transmission in the population (as shown in Figure 7 below), the prevention of vertical transmission (from mother to foetus or infant), and the expanded access to VCT throughout.



Note this model does not imply ART as a substitution for condom usage, which still should be promoted.

Figure 7: ART as Prevention

Key measures of success for the RI Program after five years are:

- Number of district level sites offering the full complement of HIV services.
- Percentage of estimated HIV-positive incident TB cases that received treatment for TB and HIV increases from 70% in 2011 to 90% in 2015, while percentage of ART patients receiving TB prophylaxis goes from 0% in 2011 to 75% in 2015.
- Number of children on ART monitored at district level in Rural Initiative provinces increases from 1 in 2011 to 13 in 2015, while percentage of known HIV-exposed children lost to follow-up after two years decreases to no more than 5% in 2015.
- Number of HIV- antenatal mothers who received counselling with their partners regarding sexual health and VCT for partners, infant feeding and other family health topics increases from 200 in 2011 to 600 in 2015
- Proportion of HIV patients under 5 or enrolled in PPTCT sleeping under insecticide-treated bed nets increase from 80% in 2011 to >90% in 2015
- Provider Initiated Counselling Testing rates in STI and TB patients (% of STI and TB patients offered HIV testing and counselling) increases from >60% in 2011 to >80% in 2015
- Percentage reduction in annual admissions from water-borne illness among those in intervention group.

Component 5: Operational Research and Monitoring & Evaluation

Component 5 Objective: *HIV policy, service delivery guidelines and/or practice influenced by dissemination of information about CHAI model(s)*

Key Outputs

5.1 M&E SYSTEM: Program M&E system implemented

5.2 BEST PRACTICE: Evidence of best practice in delivery of HIV services in CHAI program areas collected and reported to facilitate development of policy, service delivery guidelines and/or practice in PNG

The National Department of Health seeks support from CHAI to systematically document evidence-based practice from NDoH and CHAI collaborative interventions at the national, provincial, and district levels. Component 5 seeks to address the need for the development of PNG specific best practice and evidence in the areas of HIV Operational Research, Quality of Life (as proxy for Quality of Care), and the impact of HIV resources on strengthening basic primary health care. This will be accomplished by 1) Linking project M&E to key indicators for Operational Research 2) Drawing on the expertise of CHAI's Centre for HIV Operational Research (CSHOR) and other institutional partners, and 3) Building local capacity to conduct operational research.

Operational research and M&E must be part of efforts to examine the effectiveness of CHAI and NDoH supported public health interventions and applied in nature (not basic science research).

Important fields of study include but are not limited to:

- Policies and practices related to the uptake of HIV testing, particularly through PICT
- Examination of survival rates, rates of retention, rates of adherence for adult patients at CHAI assisted sites
- Analyses of human resources for health particularly to optimise functioning of clinics
- Examining the links between referral networks such TB -HIV or STI - HIV through a robust examination of clinical pathways
- Gauging the efficacy of PPTCT and paediatric programs through program retention

All studies will be designed in collaboration with the NDoH's Surveillance and M&E Unit and will maximize the use of existing data as well as conducting operational research which is, by nature, co-collaborative.

Stage 1: Component 5 Results after 2 years

- M & E system for program established and functional
- In consultation with the NDoH a minimum of 5 topic areas/studies suitable for operational research, case study, and/or program evaluation will be identified
- Implementation of study, data collection, results analysis led by National and Provincial partners
- Robust documentation of Rural Initiative efforts, particularly in the area of Case Management
- At least two studies completed and presented by CHAI and NDOH at the PNG Medical Symposium 2012, PNG Medical Journal and/or national and international other forums as appropriate.
- Link Pilots to Policy: 1 National Policy implemented which can be linked to CHAI supported efforts in operational research and M&E

Stage 1: Component 5 Key Activities

The key activities that will be undertaken to achieve these results include:

- Recruit M&E Officer (selected in Dec 2010)
- Orient M&E Officer to M&E Framework and to key database and research responsibilities

- Prepare and submit 6-month QAI reports in accordance with AusAID requirements
- Work with NDOH M&E Unit to identify and select project areas suitable for operational research, case study, or program evaluation
- Assemble design and submit to Medical Research Advisory Council for approval
- Conduct research/data collection, survey review
- Disseminate research findings to stakeholders in PNG

Stage 1 & 2: Component 5 Results after 5 years

- Minimum of 15 distinct evidence-generating activities have been conducted across CHAI program areas.
 - Evidence Generating Activities can be defined as
 - Program Evaluation
 - Cross Sectional Surveys
 - Longitudinal Studies
 - Criteria for all activities will be that they are directly supervised by the office of the Principal Advisor for HIV/AIDS and STI at NDOH and are used to inform the formulation of national policy in the HIV response
- Contribution to the evidence base on HIV care and treatment in PNG as demonstrated by the:
 - Production of policy documents for NDoH review based on a rigorous analysis of data collected
 - Contributions to the PNG Medical Journal or the annual PNG Medical Symposium
 - Publication of the findings as abstracts, conference proceedings and presentations, or in the peer reviewed literature

Component 6: Management & Coordination

Component 6 Objective: *CHAI Phase II managed effectively.*

Key Outputs

6.1 MANAGEMENT: CHAI Phase II managed efficiently

6.2 COORDINATION: Improved service-delivery pathways established and/or maintained.

The objective of the Management & Coordination component is to implement robust management and coordination systems supporting CHAI PNG and its programs to employ sound practices and to harmonize its efforts with government and other partner organizations. This new component will focus on providing staff with the necessary support to fulfil their program objectives and to follow sound programmatic, financial, and administrative policies and procedure. This component will also coordinate between CHAI PNG and government entities, partner organizations, and other stakeholders to ensure quality harmonized services.

Stage 1: Component 6 Results after 2 years

- 70% of annual component objective targets achieved
- 70% of annual output indicators targets achieved
- 70% of annual workplan activities implemented
- 0% of budget overspent
- 15% of annual budget underspend
- Annual number of patients accessing CHAI-supported services referred from other programs increases from baseline level
- Number of referral pathways initiated in CHAI Phase 1 that are consolidated or maintained during CHAI Phase 2
- Number of new referral pathways initiated in CHAI Phase II

Stage 1: Component 5 Key Activities

- Procure office equipment and software for project offices
- Convene monthly meetings of Project Administration team
- Convene quarterly staff meetings to discuss project implementation issues, policies and procedures.
- Meet monthly with Operational Research and M&E staff to ensure program implementation on track, address any issues through management structure
- Develop and implement financial management system
- Develop annual work plan informed by annual review
- Engage patients in active, ongoing discussions on shared mission and coordination
- Create or update referral pathways in major program areas in discussion with partners
- Quarterly communication with partners to discuss successes and challenges, actions and next steps

Table 3 below summarises the key achievements of each component for CHAI Phase I and the expected outcomes Phase II.

Table 3 Summary Highlights of CHAI Phase I Achievements and Proposed Outcomes in CHAI Phase II

PROJECT AREA	ACHIEVEMENTS IN CHAI PHASE I	PROPOSED OUTCOMES IN CHAI PHASE II	
		YEARS 1 & 2	YEARS 3 TO 5
Supply Chain Management	<ul style="list-style-type: none"> Established a complementary HIV supply chain system that can efficiently and routinely forecast, procure, and distribute HIV commodities throughout the country Strengthened supply chain management by building patient-level database Significantly enhanced the treatment of HIV+ infants by introducing paediatric fixed dose combination ARVs Piloted Plumpynut, a ready-to-use therapeutic food for malnourished children Worked with Logistics Unit to improve site inventory management to reduce amount of expired drugs 	<ul style="list-style-type: none"> Establish Logistics Management Information System that quantifies demand of HIV commodities by better tracking incoming/outgoing orders and identifying procurement waste-reducing and cost-effectiveness strategies Work with Logistics Unit to develop national and provincial team: prepare Standard Operating Procedures for tendering, train regional logistics officers. Develop quarterly reporting and other site share-back mechanisms 	<ul style="list-style-type: none"> Improve forecasting, procurement, and distribution capacity through improved data integrity and data driven decision-making (as indicated by reduction of emergency orders, improved turnaround time for orders to sites, and improved supply for demand of patient ARV and EID commodities) Standardize National Logistics Strategy adopted by NDoH to roll out to provinces (as indicated by simplified procurement cycles and adoption of Standard Operating Procedures for
Laboratory	<ul style="list-style-type: none"> Introduced and established early infant diagnosis (EID) in PNG, which together with Early Infant Treatment (with paediatric ARVs) have been a key contribution to averting deaths in infants with HIV Improved HIV monitoring of HIV+ patients by retraining all CD4+ machine operators as well as training new staff Worked with NDoH and WHO to validate a 2-test algorithm for on-site HIV testing and confirmation Began validation of viral load platform to further advance HIV patient monitoring in PNG 	<ul style="list-style-type: none"> Expand EID program, including second laboratory site providing this service in EHP, to conduct 500 tests from 61 clinical sites in 9 high burden provinces Assist in 2-test algorithm rollout in 3 provinces per year, establish lab confirmatory algorithm Establish robust quality assurance system for HIV testing, including DNA PCR (90% accuracy) and HIV serology (80% accuracy) Develop and strengthen HIV monitoring through continued implementation of CD4 testing, introduction of point-of-care CD4 testing, and establishment of viral load testing 	<ul style="list-style-type: none"> Expanded and improved Early Infant Diagnosis of HIV (as indicated by number of EID testing sites, number of provinces offering the service, quality and accuracy of the tests, and number of EID tests performed) Robust quality assurance system established and implemented (as indicated by accuracy of tests and participation of sites in quality assurance programs and number of laboratory reaching accreditation standards) Develop and implement system for monitoring HIV+ patients (as indicated by number of sites offering CD4, microbiology, hematology, and biochemistry testing, as well as number of viral load tests performed)
PPTCT / Paediatrics	<ul style="list-style-type: none"> Renovated site at national referral hospital to house the Well Baby Centre, integrating HIV paediatric services with other Well Baby services Replicated and adapted clinical case management model (from the Rural Initiative) to retain HIV positive mothers and their babies in care from ANC through paediatric services In step with EID roll out, adopted and began implementation of Early Infant Treatment, doubling the number of children on treatment from 2008 to 2009 Catalysed the adoption of new National Guidelines for Early Infant Treatment Trained prescribers, initiated mentoring at 2 sites, and established a national paediatric curriculum 	<ul style="list-style-type: none"> Renovate 2 new sites for integrated PPTCT / Paediatric services in high burden provinces; recruit and train staff for these sites Implement clinical case management to increase retention and address loss to follow up in these new PPTCT and Paediatric sites Establish and widely disseminate widely standard operating procedures to synergise patient flow and integrate PPTCT / Paediatric services Work with Laboratory program to expand EID and EIT in high burden sites Develop and implement strategies for male partner involvement at key service entry points Develop and initiate training and mentoring plans for MCH, PPTCT, and paediatric ART providers 	<ul style="list-style-type: none"> Increase number of sites providing PPTCT and Paediatric ART services (as indicated by number of sites offering integrated services) Improved quality of PPTCT services at high prevalence sites (as indicated on annual scores on quality assessments and increases in patient retention, women tested, and women receiving ART prophylaxis) Improved quality of clinical care for HIV exposed and infected children in CHAI-supported sites (as indicated by improvements at sites, increases in number of children receiving EID and subsequent EIT, and retention rates)

PROJECT AREA	ACHIEVEMENTS IN CHAI PHASE I	PROPOSED OUTCOMES IN CHAI PHASE II	
		YEARS 1 & 2	YEARS 3 TO 5
Rural Initiative	<ul style="list-style-type: none"> • Successfully decentralized HIV testing, care and treatment to all eight districts of Eastern Highlands Province in partnership with NDoH, Goroka Hospital and Eastern Highlands Provincial Health Services • VCT training of Health Care Workers as well as laypeople has resulted in much higher numbers of VCT through Goroka Hospital and rural outreach. Over 5,000 people have now been tested through the Rural Initiative's health fairs featuring VCT • Extensive uptake of PICT throughout Goroka Hospital and affiliated clinics • Provincial Health Services employees entirely staffed expansion of adult ART to the district level, optimizing existing human resources within a province through mentorship and supervision • Over 33% of all clients now registered in district level facilities • Registered ARV patients increased from 140 to over 1,200 • LTFU rates reduced from 65% to 15% among adult ART patients; 70% to 2% among PPTCT mothers • Provincial Health Services adopted CHAI-funded innovations in medical waste, access to water, and solar power for replication • Replication in Southern Highlands Province, with case management teams in Mendi and Tari. 	<ul style="list-style-type: none"> • Operate high quality adult ART clinics in each of the eight Districts of EHP so that more than 85% of adults, adolescents, and children with HIV are still alive and known to be on treatment 12 months after initiation of antiretroviral therapy in Rural Initiative sites • Increase district level sites offering antenatal package in WHP and SHP by 10 • Conduct at least 20 health fairs featuring VCT with Hospital outreach team with 1,200 people getting tested • Counsel at least 200 couples in Y1 and 300 couples in Y2 in sexual and reproductive health and infant care in antenatal settings • Ensure all Rural Initiative ART Providers implementing TB prophylaxis among HIV patients while getting newly diagnosed HIV patients with TB on ART (as per TB/ HIV guidelines) in EHP, WHP, and SHP • Establish Case Management in WHP; continue the model in EHP and SHP with LTFU less than 15% • Develop Case Management training curriculum • Train 3-5 new Laboratory Fellows per year through Rural Initiative Laboratory Management Fellows Program to build laboratory management capacity • Conduct at least 2 expert patient trainings for PLHIVs to partner with Case Managers on counselling newly diagnosed HIV+ patients; follow-up on those trainings with placements with team • Continue micro-finance program, which provides appropriate entrepreneurial and cooperative loans to people living with and/or affected by HIV, with at least 32 people receiving loans • Provide school fees for at least 30 selected children or adolescents living with or affected by HIV • Develop and provide safer drinking water solutions for those identified most at risk of quality poor drinking water for at least 200 patients 	<ul style="list-style-type: none"> • Improved quality Health Care Service (HCS) in selected rural sites (as indicated by numbers of mothers receiving full complement of services and children receiving ART at district level, couples counselled on family health) • Increased linkages across continuum of care (as indicated by PICT for STI and TB patients, lower rates of TB co-infections and mortality, increase those on TB and HIV treatment) • Increased adherence and retention for children, adolescents and adult patients in selected sites (as indicated by better nutrition outcomes and reduced loss to follow up rates, increased use of bed nets) • Improved laboratory quality and scope of services in selected RI sites (as indicated by number of district sites offering antenatal testing, better clinical diagnosis of HIV mortality, and annual Lab Fellows trained) • Programs engaging people living with HIV as expert patients, parent-to-parent counselling, village patient monitoring and livelihood enhancement established (as indicated by number of expert patients trained and providing counselling for newly diagnosed and village health workers trained and working in patient monitoring) • Innovative products and systems developed and utilized to improve rural health services and home based self care (as indicated by reduction in waterborne illness and innovative solutions piloted to address rural challenges in HIV service provision)
Operational Research (new)		<ul style="list-style-type: none"> • In consultation with the NDoH a minimum of 5 topic areas/studies suitable for operational research and program evaluation selected in the first year of the program • Study Design and Methodology are finalized • Ethics approval for identified projects granted by the PNG Medical Research Advisory Council • 2 studies completed and presented by CHAI and NDoH at the PNG Medical Symposium 2012 and/or other forums as appropriate. 	<ul style="list-style-type: none"> • At least 15 distinct evidencegenerating activities have been conducted across CHAI program areas that can be used to inform the formulation of national policy in the HIV response • These will contribute to the evidence base on HIV care and treatment in PNG as demonstrated by the: <ul style="list-style-type: none"> -- Production of policy documents for NDoH review based on a rigorous analysis of data collected -- Contributions to the PNG Medical Journal or the annual PNG Medical Symposium -- Publication of the findings as abstracts, conference proceedings and presentations, or in the peer reviewed literature

4 BUDGET

Apart from directing as much funding as possible towards direct program expenses, Phase I experience has provided important learning in how cost efficiencies can be created despite the high operating costs associated with working in PNG. For example, the initial roll out of the Rural Initiative has yielded important, concrete evidence of how HIV care and treatment resources can be strengthen overall health system capacity. For example, improved HIV case detection at the Health Sub-Center level has led to implementation of a strengthened antenatal testing packages including Point of Care Hemoglobin testing, Point of Care Syphilis testing (Purchased by Department of Family Health) in addition to Point of Care HIV Testing. Modest improvements to pathology at both the Provincial Hospital and some Health Centers have been accomplished through funding of microscopy and additional bench/laboratory space.

With respect to Human Resources CHAI has been able to develop an ART service minimum package consisting of 1 prescriber (MO/HEO) + 1 support (NO/CHW) per 65 patients in care (each must have back-up close by to cover leave times). Moreover, attention has been paid to improve supervisory & mentorship visits to District facilities. By advocating for a model of Family Clinics (e.g., One-Stop shop for ANC, Specialty GYN, OB, PPTCT, and Pediatric HIV), further cost efficiencies are created by cohousing clinical staff, streamlining training and mentoring, and decreasing patients lost in the referral process. CHAI will also continue to seek to leverage additional funding for these efforts from Members of Parliament and donor/partners such as the ADB and UNICEF as has been successfully done in the past.

Perhaps most importantly, CHAI's intensive focus on system building through Hospital facilities in the area of Case Management will continue to improve patient adherence to ART and reduce attrition. This will, in turn, reduce the number of patients experiencing treatment failure and requiring extensive in patient hospital stays thereby further burdening the tertiary care system.

4.1 Budget Justification

INTRODUCTION

The Phase II overall budget request is AUD 27,095,350 over the period 2011-2015. A line item budget for Stage 1 (Years 2011 and 2012) is presented in *Figure 8*; further breakdown by program is included in Annex 3, along with the entire Phase II (Years 2011-2015) budget.

CHAI Phase II will continue to partner with the government of PNG to help scale up HIV care and treatment throughout the country. It will implement activities to this end through its core programming in these central areas: Supply Chain Management, Laboratory, PPTCT and Paediatric, Rural Initiative, and Operational Research and Monitoring & Evaluation. Besides funds for program-related expenses, CHAI Phase II will also require fiscal and administrative support to insure meeting the goals of the program.

Methodology

The approach used in developing the five-year budget was a rigorous, detailed review of program spending from 2006-2009 led by CHAI PNG's Senior Management and Finance Manager. This including examining the following documents to generate appropriate budget line items:

- Approved program budgets for 2006-2009
- Summary of Accounts statements from 2006-2009 detailing level of spending in major categories
- Review of individual program spending with Program Managers in their respective areas

Figure 8 CHAI Phase II Stage 1 2011 and 2012 Budget

ACCOUNT DESCRIPTION	2011	2012
CHAI – Salary Employees	649,336	713,985
CHAI – Payroll Tax	25,402	27,942
CHAI – Health Insurance	70,070	70,070
CHAI – SOS Insurance	5,725	6,297
CHAI – Retirement	17,932	19,725
Subtotal: Salary and Benefits	768,464	838,019
CHAI – Professional	30,030	31,532
CHAI – Legal and Accounting	22,793	15,540
CHAI – Consulting Expenses	46,000	33,521
Subtotal: Consultants	98,824	80,593
CHAI – Lab & Diagnostic Supplies	758,410	710,110
CHAI – Care Partner	905,183	990,158
CHAI – Direct Program Support - Other	257,700	405,612
CHAI – Training	442,824	446,524
CHAI – Infrastructure	562,800	428,000
CHAI – In-Country Implementation Program Expense	2,000	–
Subtotal: Program	2,928,917	2,980,403
CHAI – Insurance	14,014	15,415
CHAI – IT Support	3,844	1,959
CHAI – Office Equipment (incl. Computers)	27,392	25,176
CHAI – Office Furniture	18,018	14,414
CHAI – Office Supplies	43,610	33,323
CHAI – Dues, Subs, & Publications	1,001	1,101
CHAI – Telecommunications Expense	71,996	79,128
CHAI – Rent / Lease Expense	459,133	499,132
CHAI – Buildings Repairs & Maintenance	17,000	21,926
CHAI – Security	53,634	60,997
CHAI – Vehicle Repair and Maintenance	16,024	17,426
CHAI – Capital Charges	–	45,760
CHAI – Utilities	19,219	21,141
CHAI – Bank Charges	671	692
CHAI – Printing	16,000	15,526
CHAI – Postage / Courier	2,402	2,523
CHAI – (NON-UNITAID) Clearing, Shipping, Distribution	4,700	3,000
Subtotal: Office	768,658	858,639
CHAI – Staff Airfare / Extended Rail	76,000	88,425
CHAI – Staff Lodging	61,488	72,324
CHAI – Staff Meals	13,497	16,607
CHAI – Car Service: Taxi, Local Transport, Fuel	40,876	44,942
Subtotal: Office Travel	191,861	222,298
TOTAL CHAI PNG PROGRAM	4,756,724	4,979,952
12% Global Allocation	648,644	679,084
Total Budget	5,405,368	5,659,036
Grand Total Two Year Phase Budget		11,064,405

- Costing exercises in the Rural Initiative Program to determine approximate per patient costs for Case Management support
- Infrastructure components across all programs were assessed based on experience of renovations and construction undertaken over the past four years
- Costing components of the Laboratory Program as part of CHAI's contribution to the costing exercise for the overall National Health Strategy

Expansion in Phase II

In Phase II, Stage 1, the total Year 1 (2011) budget is AUD 5,405,368. Year 2 (2012) the budget increases to AUD 5,659,036. The average yearly budget for this period is AUD 5,532,202.

This AUD 2 million increase from CHAI Phase I (approximately AUD 3,500,000 per year) reflects the major expansion of the program that has been requested by GoPNG. In broad strokes, Phase II will see key rollout efforts in its programs in the Rural Initiative, PPTCT and Paediatrics, Laboratory, and Supply Chain Management. In the Rural Initiative, the program will expand its model of decentralised HIV services to the Western Highlands Province, a high priority for NDoH. The Rural Initiative will also expand its work with PLHIV as expert patients. The PPTCT and Paediatric program will replicate its model of integrated HIV services within the ANC and Paediatric settings in two additional high burden cities, Mt. Hagen and Lae, as well as strengthen domestic violence counselling and male partner involvement at its sites. The Laboratory program will increase coverage in EID to additional sites and introduce new HIV monitoring platforms (i.e., viral load and POC CD4) that will help clinical care throughout the country. The Supply Chain Management program will introduce the LMIS database to better forecast, procure, manage, and distribute HIV commodities nationwide. In addition, all of the ongoing objectives and activities associated with them from Phase I will continue in this next phase in addition to the expanded activities and new program areas. Finally, CHAI will introduce its Operational Research and Monitoring & Evaluation component to gauge its performance and to influence its future direction as well as to add to the body of knowledge on best practices on HIV service provision and innovation for the PNG context.

Some specifics on what this additional funding will support (these are average yearly costs for Stage 1):

- Establishment and implementation of viral load testing and POC CD4 and implementation of DNA PCR at 2 sites for EID for an additional AUD 538,000
- Expansion of HIV Care, Treatment, and Support in Western Highlands Province and PPTCT and Paediatric ART in Lae, Morobe Province through new Care Partnerships with Mt. Hagen and Angau Hospitals to fund 22 national staff for program implementation for an additional AUD 325,000
- Infrastructure for PPTCT and Paediatric integration at Mt. Hagen and Angau Hospital, partner counselling and services at PMGH, and Western Highlands Province Rural Initiative roll out for an additional AUD 279,000
- Increased direct program support in all programs for an additional AUD 92,000
- Increased training for staff at new sites and expanded program activities for an additional AUD 90,000
- Rent for new staff in Port Moresby, Goroka, and Mt. Hagen for an additional AUD 124,000
- Expanded security service coverage to match new programming sites for an additional AUD 22,000
- Salary for new CHAI positions for program expansion for an additional AUD 25,000

The difference between Year 1 and Year 2 is a 4.7% increase. This partly reflects scale up efforts in programs (especially Laboratory, PPTCT and Paediatrics, and Rural Initiative) that naturally have associated costs. In other words, more CD4 and EID testing will require more reagents and other consumables; more sites providing EIT will require more training and mentoring of HCWs; and more people accessing HIV services will require more patient support mechanisms. In addition, this conservative adjustment partly addresses rising costs in PNG. In its *Asian Development Outlook 2010*, ADB projects that PNG's inflation will remain relatively high at 7.1% and 7.7% over the next 2 years. The LNG project is also expected to increase demand and rents in an already hyper-inflated housing market. Therefore, fixed costs and the overall operational cost of doing business in PNG will undoubtedly rise. Note that without an increase in the base award, program budgets must be lowered every year. For example, if 2% of the budget needs to be spent to meet increased cost of salaries and office expenses then that means a 2% reduction of available funds for program.

Costs have also increased in programming. Training expenses in particular have risen sharply. In February of this year, GoPNG's Department of Personnel Management issued Circular 3 revising travel allowances for public servants. It more than doubled the daily rate from PGK 80 to PGK 200 (from AUD 33 to AUD 84)*. In addition, training-related services, including air travel and accommodations, continue to rise due to fuel costs, higher demand, and limited supply.

Despite the increasingly high costs of operating in PNG, however, CHAI's Phase II budget has managed to keep operating costs to a minimum and to maximize available resources for programming. Figure 9 below illustrates how the Phase II Stage 1 budget breaks down by expense categories. Note that at 52%, Program is the largest expense category and is in line with CHAI's 'value for money' philosophy.

Figure 9 CHAI Phase II Stage 1 Budget by Expense Categories

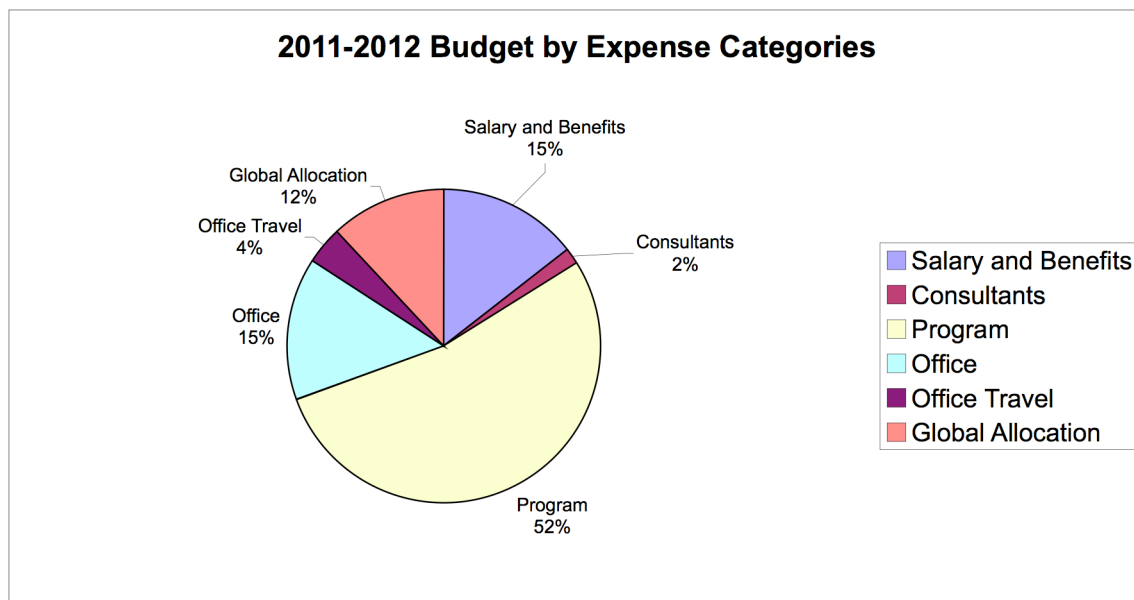
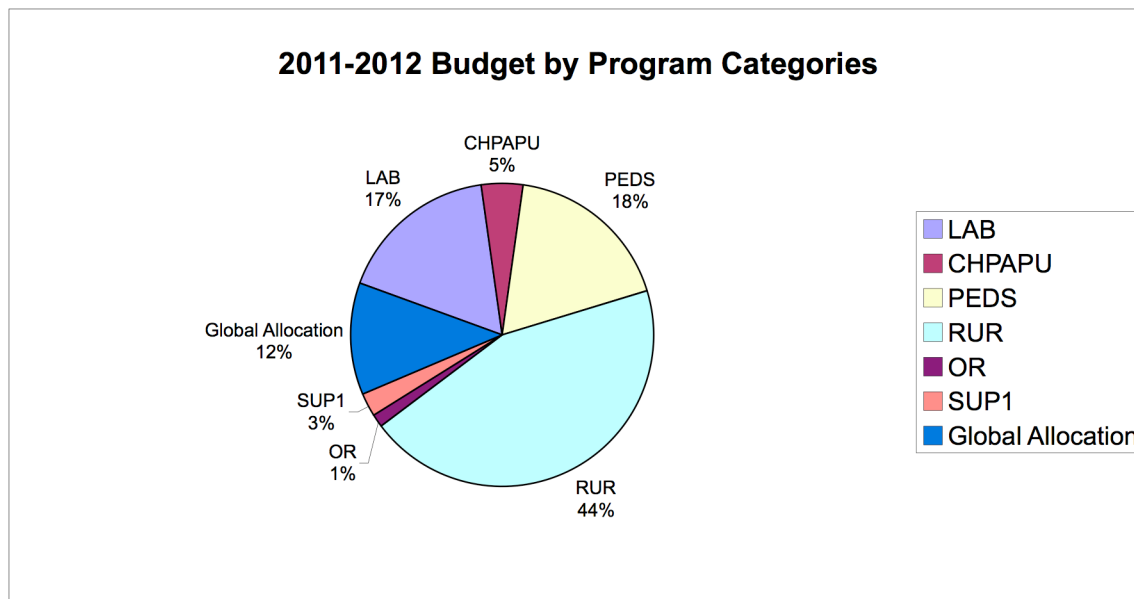


Figure 10 shows the proportion of the total budget that is allocated to the different program areas. Note that CHAI's major program, the Rural Initiative, constitutes 44% of the program budget. At 18% and 17% respectively, PPTCT and Paediatrics and Laboratory also represent significant program areas.

* Conversion rates used: PGK 1 = AUD 0.42, USD 1 = AUD 1.144

Figure 10 CHAI Phase II Stage 1 Budget by Program Areas

SALARIES AND BENEFITS

In Phase II on average, salary and benefit expenses represent 17% of the total budget; this provides funding for a team of eight in-country expatriates, and portions of regional staff salaries including our Regional Medical Officer and Regional Director. Salaries for local staff, which are projected to be absorbed into health facilities' annual budgets in the future, are listed under Care Partners (see *Care Partners* below).

As shown in the Organizational Chart (Annex 4) CHAI will be maintaining continuity with the team that collaborated with local partners to achieve strong intermediate outcomes and impact in Phase I interventions. Seven of the eight in-country expatriate staff continuing with the program have been with the CHAI PNG team between one and four years.

Salaries of CHAI PNG staff (8 positions / 8.0 FTE) and CHAI regional staff (4 positions / 0.75 FTE) total AUD 803,241*. CHAI PNG staff includes the Country Director (Mr. Sarthak Das, MPH), the Deputy Country Director (Mr. Prescott Chow, MUP), the Director of Rural Programs (Ms. Andy Carmone, CNM, MPH), the Clinical Director of Rural Programs (Dr. Dale Frank, MD), the Clinical Director for PPTCT and Paediatrics (Dr. Mobumo Kiromat, MD), the Laboratory Advisor (Dr. Jessica Markby, PhD), the Business Service Manager (Ms. Vijayalakshmy Puthumangalath), and the Rural Program Officer (Dr. Myomyo Myint, MD). CHAI regional staff includes the Southeast Asia Regional Director (Ms. Ruby Shang), the Deputy Regional Director (Mr. Zachary Katz, MPA), the Regional Medical Officer (Dr. Joseph Harwell, MD), and the Regional Laboratory Advisor (Dr. Aye Aye Khine, PhD).

Note that 2 new half-time positions – the Administrative Liaison and the Research Coordinator positions – are not budgeted in Stage 1 of Phase II. Staff for these positions will be hired in 2013. Until then, the existing executive management staff will subsume the positions' responsibilities or delegate accordingly.

All salaries and benefits are within standard CHAI salary ranges.

* All amounts are average yearly costs for Stage 1 (2011 and 2012)

CONSULTANTS

Consulting totals (AUD 89,708) include professional consultant costs for laboratory-based CD4 testing expertise and information technology consulting to build the LMIS database; legal and accounting consultant costs for GST filing, IPA registration, and new local payroll setup, as well as visa and work permit filing for international staff; and consulting expenses for expertise in laboratory and innovative technologies for rural sites.

PROGRAM

Program expenses (AUD 2,954,660) account for 53% of the total budget; this is used to provide technical, programmatic, and staff support within:

- the National Department of Health including the Logistics Unit;
- Provincial Hospitals, in Eastern Highlands, Western Highlands, Southern Highlands, and Morobe Provinces;
- the Central Public Health Laboratory; and
- PPTCT and Paediatrics programs at Port Moresby General Hospital's Well Baby Centre and at the hospital's HIV/STI Clinic.

The program expenses budget will also pay for the implementation of a range of activities associated with district level scale up, infrastructure development, quality assurance, laboratory equipment, case management, patient support, trainings, meeting support, curriculum development and distribution, on-site mentoring visits, and monitoring and evaluation. Included within are also printing, postage, IT, program related travel and telecommunications costs. Significant expense line items (laboratory supplies, direct program support, training, and infrastructure) in this category are detailed below:

Laboratory Supplies

This includes costs for establishing and implementing viral load and POC CD4, running ongoing HIV serology and EQAS quality assurance testing, and scaling up EID in high burden sites (AUD 734,260).

Care Partners

Contracts with Provincial Hospitals will support 60 local staff positions (38 existing positions and 22 new hires).

- Goroka General Hospital: 16 positions (1 HIV Coordinator, 3 Health Extension Officers, 5 Nursing Officers, 4 Community Health Workers, 1 Clerical Assistant, and 2 Drivers)
- Mendi Hospital: 9 positions (1 HIV Coordinator, 1 Health Extension Officer, 3 Nursing Officers, 2 Community Health Workers, 1 Driver, and 1 Administrative Officer) plus 3 positions at Tari Hospital (1 Health Extension Officer, 2 Nursing Officers)
- Angau Hospital: 3 positions (1 Health Extension Officer, 1 Nursing Officer, and 1 Community Health Worker)
- Mt. Hagen Hospital: 19 positions (1 HIV Coordinator, 4 Health Extension Officers, 6 Nursing Officers, 5 Community Health Workers, 1 Clerical Assistant, and 2 Drivers)
- Port Moresby General Hospital: 10 positions (3 Health Extension Officers, 2 Nursing Officers, 2 Community Health Workers, 2 Data Clerks, and 1 Doctor)

In addition, CHAI will continue to contract with JTAI, an HR consulting firm, to continue supporting staff for CPHL, as well as local CHAI staffing

- CPHL: 3 positions (1 Program Manager, 2 Scientific Officers)
- CHAI: 14 positions (5 Administrative Officers, 3 Drivers, 1 Rural Program Officer, 1 Rural Program Analyst, 1 PPTCT and Paediatric Program Officer, 1 Operational Research and Monitoring & Evaluation Officer, 1 Operational Research and Monitoring & Evaluation Country

- Analyst, and 2 Supply Chain Management Country Analysts)
- NDoH: 2 positions (2 Logistics Officers)

All local positions are within standard GoPNG salary ranges and benefit packages as defined within the Government Orders.

Finally, CHAI will contract with local faith-based and non-governmental organizations to assist with program implementation in PPTC and Paediatrics

- Catholic Health Services – support for the Amateur House of the Diocese of Bereina, a transit house for families from Gulf and Central Provinces coming to NCD for HIV clinical appointments at the Well Baby Centre
- Friends Foundation – support for the bi-weekly psycho-social group therapy for HIV+ mothers and their families

Care Partners totals are budgeted at AUD 947,670.

Direct Program Support

This line item (AUD 331,656) covers all expenses related to program implementation. It includes patient support activities (e.g., transportation reimbursements, nutritional supplements, and livelihood development efforts) as well as larger purchases that positively impact patients or other stakeholders (e.g., examination couches for clinics or basic furnishings for Aid Posts).

Training

This area covers all costs associated with programmatic trainings, including travel, accommodations, travel allowances, training materials, and other related costs (AUD 444,674). Trainings for Stage 1 include supply chain management training for regional logistics officers; EID dried blood spot collection training for HCWs; quality assurance laboratory training; CD4 refresher training for machine operators; PPTCT training for MCH service providers; mentorships for clinicians at high burden sites; update meetings with Paediatric ART clinicians; IMAI, PPTCT, Paediatric ART and PICT training, followed by mentorship and supervision of newly trained HCWs at Rural Initiative sites; VCT trainings for HCW staff and select laypeople at Rural Initiative sites; antenatal testing training, mentoring, and supervision within Rural Initiative Provinces; new Fellows training through Rural Initiative Lab Management Fellows Program; Expert Patient trainings; parent-to-parent counseling trainings; and TB/HAART DOTS (includes village patient monitoring) trainings.

Infrastructure

This area covers renovations for Rural Initiative sites in Eastern Highlands and Western Highlands Provinces to upgrade district facilities and upgrade laboratories; renovations for PPTCT and Paediatric integration at Mt. Hagen and Angau Hospitals; and renovations at PMGH for a partner counselling space to facilitate male partner involvement (AUD 495,400).

OFFICE

Key to CHAI's philosophy is maintaining overall in country overhead expenses to a minimum and to maximize allocation of available resources to programming. Despite the increasingly high costs of operating in PNG, CHAI's Phase II budget has managed to keep in country overhead relatively low: at AUD 813,648, office maintenance, utilities, security and rent account for 15% of the budget. It is important to note that CHAI's main offices are housed within government agencies and institutions at the national, provincial, and facility levels. Not only does this assist with maintaining low overhead costs, it also reinforces CHAI's approach of serving in alignment with efforts of the NDoH. Significant expense line items (telecommunications, rent, and security) in this category are detailed below:

Telecommunications

Includes mobile phone costs for all CHAI staff and landlines and internet service for the Port Moresby and Goroka offices. Also covers satellite phones for communications coverage in remote areas in the bush. In addition, costs for radio monitoring are captured here (AUD 75,562).

Rent

Total rent is AUD 479,132.

- In Port Moresby – the auxiliary office is calculated per annum at AUD 84,084* for the Port Moresby site. Housing for expatriate staff (2) in Port Moresby is at the same rate. Total rent for other national staff (3) in Port Moresby comes to AUD 93,483.
- In Rural Sites – Total housing for staff (5) comes to AUD 113,400. Three expatriate staff are in Goroka, EHP and two staff are in Mt. Hagen, WHP.

Security

Security costs (AUD 57,315) include on-site personnel and off-site alarm monitoring systems. This area also includes security escorts and security system maintenance.

OFFICE TRAVEL

This amount (AUD 207,079) includes travel for staff for annual leave and other non-programmatic travel.

CHAI GLOBAL

Twelve percent (12%) of the budget (or AUD 663,864) will be divided into allocations to CHAI headquarters for administration, finance, accounting and human resources in addition to CHAI's Global Program support through CHAI's Global Paediatrics Team, CHAI's Drug Access Program which works to lower ARV prices globally, CHAI's Procurement program which handles international commodity purchase ordering and CHAI's Lab Services Program which provides technical assistance, particularly in the areas of Early Infant Diagnosis, Viral Load, and Point of Care Technologies and lowers diagnostic costs globally.

CHAI's Global Teams include experts at the forefront of global HIV/AIDS treatment who are involved in writing WHO guidelines, working with the President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund to ensure synergy and access to HIV/AIDS treatment, and negotiating with drug and diagnostic supply companies to enable countries to envision a future without donor support. Working together with CHAI's Global teams enables CHAI PNG to offer the NDOH most up to date information and advances in paediatric HIV treatment and diagnostics, evidence of best practice from around the world and drugs and lab commodities at the lowest possible prices, increasing the chances of future sustainability. It also allows CHAI PNG to work more efficiently. Rather than duplicating work to produce resources such as visual aids for clinics, mentoring and drug dosing tools, and forecasting and quantification models, CHAI PNG adapts specialized tools developed by CHAI's global teams for the local context.

Note that in Phase I, CHAI and AusAID had agreed on this negotiated 12% allocation; this rate is standard across the countries where CHAI works.

* While this amount is alarmingly high, the weekly rate of PGK 3,500 per unit (AUD 1,470) is below the average rate for secure units in Port Moresby.

5. IMPLEMENTATION ARRANGEMENTS

5.1 Management Arrangements

Agreement with the Government of Australia

A Memorandum of Understanding between the Australian Government and Former President Clinton was signed in February 2006 stating the Australian Government, through AusAID, would provide funding of up to AUD 25 million over four years, to be complemented by funding from CHAI to work in China, Indonesia, Vietnam, and PNG.

Given the expiry of current funding agreements, Phase II Funding will require a new MOU to cover 2011 – 2015 to be signed by CHAI and the Australian Government's Aid program.

Agreements with the Government of PNG

Former President Clinton signed an MOU with Prime Minister Somare in December 2006 enabling the Government of PNG to access paediatric HIV commodities under the UNITAID Agreement. In addition, an MOU exists between the National Department of Health and CHAI (2006) that specifically seeks the technical assistance of CHAI to improve and expand HIV care delivery systems and health systems in general in PNG

CHAI PNG Staffing & Organizational Chart

The staffing and organizational chart for implementing CHAI PNG Phase II is shown in Annex 4.

Supply Chain Management will be staffed by two half-time Analysts to work with the National Department of Health's Logistics Unit to ensure timely forecasting, procurement, management, and distribution of ARVs and HIV commodities.

The Laboratory Program will be staffed by one Laboratory Advisor to work with the Central Public Health Laboratories and the Provincial Labs to scale up EID nationwide, implement quality assurance for HIV testing, and utilize better patient monitoring tools.

PPTCT & Paediatrics will be staffed by one Clinical Director to support national trainings, conduct clinical mentoring at selected high-burden sites, and implement integrated ANC & Paediatric services through case management activities at selected high-burden sites. One Program Officer will also support the scale-up.

The Rural Program will be staffed by a Director of Rural Programs and a Clinical Director to oversee the scale-up of care and treatment to rural areas in EHP, WHP, and SHP. These individuals will bring expertise in both the clinical management of HIV as well as a depth of experience in public health. The Rural Initiative will further be supported by three staff consisting of two Program Officers and one Analyst.

A Management & Coordination team will support these programs. The Country Director will provide overall oversight and management to the CHAI program while ensuring coordination of program effort with government and partner organizations. In addition to supporting the Country Director, the Deputy Country Director will provide oversight to all Human Resource, Administrative, and Finance functions. An Administrative Liaison to the Country Director will provide high-level assistance in management, recruitment, retention, as well as the development of documentation and communication strategies. Finance & Administration staff (the Business Service Manager) will ensure sound finance and administration policies are followed.

Technical oversight across M&E programs and Operational Research efforts will be provided by a Research Coordinator who will lead the Monitoring and Evaluation/Operational Research team, provide oversight of M&E across all programs and, link NDoH, CHAI's Centre for Strategic HIV Operations Research, and other partner institutions. A Program Officer for M&E and one half-time Analyst will work under the Research Coordinator with the different programs on M&E as well as identifying areas for further research and analysis, and helping NDoH to build the evidence base in HIV Care and Treatment.

Wherever possible CHAI PNG will continue to employ Papua New Guinean Nationals; in addition to many support staff, both current Clinical Directors for CHAI's Programs are Papua New Guineans. HIV Care and Treatment remains, however, a new field of endeavour in PNG and Phase II will still necessitate the engagement of outside technical expertise and advisement to the national and provincial level programs. At the request of NDoH and Provincial Partners, some expatriate staffing will be employed in the Rural Initiative, Supply Chain, M&E/Operational Research, and Laboratory programs given the current lack of local technical expertise in these areas.

5.2 Gender Issues

Gender inequities greatly influence the sexual transmission of HIV in PNG. As noted previously, HIV surveillance and testing data show that women between the ages of 15 to 35 years have the highest burden of infection. Women and girls are more vulnerable to HIV infection than men and boys and less able to protect themselves because of the many economic, social, legal, political and cultural disadvantages they face. The increased vulnerability of women and girls, combined with the reality that, "health-related shocks exacerbate the already deepening feminisation of poverty in the world," necessitates that HIV responses be conducted while looking through a lens of gender-based violence and gender inequality, two factors often cited as significant determinants of risk of HIV infection (Mehta and Gupta for UNIFEM 2008).

Gender-based violence refers to the various forms of violence that women, men, girls and boys, including transgender people, experience because of issues relating to gender and sexual identity. These forms of violence include: domestic violence and other forms of physical violence, rape (including marital rape), pack rape, sexual abuse and exploitation of girls and boys, sexual harassment in workplaces and schools, incest, forced prostitution, sexual abuse by authorities during conflicts, disasters and emergencies and by the police, and homophobic violence directed towards men and women who are, or assumed to be, same-sex attracted. Gender-based violence, including sexual assault is both a cause and a consequence of HIV infection. Research in PNG and elsewhere has established that women who have experienced physical and sexual violence have higher rates of STIs and HIV. Women with HIV often suffer violent reprisals when they tell their partners or families of their status (PNG National AIDS Council 2010).

Systemic neglect of the biological and sociological needs of women and girls by the health care system can also exacerbate the vulnerability of women and girls to HIV and STI. CHAI PNG Phase II Program, through the Rural Initiative and PPTCT programs, is well placed to address some of the consequences associated with gender related vulnerability to HIV & STI.

Examples of areas where Rural Initiative has and will continue to reduce systemic neglect of women's needs in the health system as follows:

Providing a 'One Stop Shop' for care of pregnant women

In both the Rural Initiative and PPTCT and Paediatric programs, pregnant women accessing antenatal care services are provided with a complete gynaecological and systemic examination and treated for

STIs. This comprehensive care is an aggressive and direct confrontation of biological and gender vulnerabilities of women.

HIV+ pregnant women are treated for their HIV infection in the antenatal setting and not referred to an STI clinic where adults with HIV receive treatment. This Case Management approach is unique to CHAI PNG and serves not only to provide better health care for these female patients, but also prevents loss between those clinical areas. It also reduces the risk of stigma, discrimination or even domestic violence that could ensue from being seen at the STI/HIV clinic during pregnancy.

Another important example of Rural Initiative health systems strengthening that results in better care for women's needs is the decentralization of PPTCT services. Even in the first phase, where only antenatal testing for haemoglobin, HIV and syphilis is offered at district level, great strides are made for women, as these tests, previously unavailable, can prove lifesaving. Before Rural Initiative in Eastern Highlands, most women attending antenatal services were never offered an HIV test. Consequently many HIV infected mothers delivered their babies without ever receiving any intervention for prevention of transmission. The Rural Initiative program has made HIV testing and counselling accessible to women at the district level. In Western Highlands Province, Mt. Hagen Hospital is reporting that currently 11% of "unbooked" mothers delivering there are HIV infected. These women likely attended at least one antenatal visit at a district level facility. Because no testing is done, they are considered "unbooked" when they come to deliver. Once Rural Initiative begins implementation there, this figure will decrease dramatically as those women will be identified through the Phase II of PPTCT decentralisation and given the highest quality PPTCT services available.

Research on association between gender-based violence and PICT for pregnant women

Anecdotal evidence indicates that provider initiated counselling and testing of pregnant women may be preventing some pregnant women from accessing antenatal services. Due to concerns about domestic violence and/or abandonment by their partner and other negative social consequences, some women do not attend antenatal clinics even when they have access. They either give birth at home or come to the health centre or hospital when in labour and leave as soon as they have delivered the baby, which can endanger health of mother and baby. It is important to find out whether significant numbers of women are affected by this issue and to determine ways of addressing the concerns. The CHAI Phase II Program will undertake such research as a priority. The information from the research will be made available to NDoH and other partners engaged in the PNG response and used to modify the PPTCT and Rural Initiative Programs if this is required.

Sexual Relationship Power Scale (SRPS) operational research

Another example of important Operational Research that CHAI PNG can conduct to help address HIV with gender sensitivity is a study, similar to some conducted in Africa, using an adaptation of the Sexual Relationship Power Scale (SRPS) where women presenting for antenatal care in rural PNG and accept routine HIV testing are given a private interview. This would include assessment of socio-demographic characteristics, experience of gender-based violence, and risk behaviours including multiple, concurrent male partners, and transactional sex. Such information can elucidate the role, if any, that being involved in an abusive and controlling relationship has on risk of HIV infection for women of child-bearing age in PNG.

Gender inequality, HIV and Poverty operational research

Because gender-based violence and gender inequality are often cited as determinants of women's HIV risk, research is required to widen the evidence base regarding gender inequality and its impact on the HIV epidemic in Papua New Guinea. While the disaggregation of Rural Initiative patient data by sex and age in five-year increments is an important contribution to this growing knowledge base, this

information is reported in that way to the NDoH and collated with data from around the nation to form a comprehensive picture of what is known of the epidemic. Rural Initiative has smaller pockets of data that could serve to add more detail to this sharpening picture. For example, through Case Management, food security is assessed and protein supplementation is addressed as necessary. In 2011-2015, Case Management will conduct more detailed food security and nutritional status evaluations at intake and bi-annually in order to better address nutritional deficiencies of patients. These data, once disaggregated by sex and age in five-year increments, could provide vital information about the interlocking problems of gender inequality, HIV, poverty, food security, and livelihood in rural Papua New Guinea.

Involving men in antenatal care and PPTCT

The greater involvement of men and boys in HIV prevention and care is critical for addressing gender-related vulnerabilities, for shifting gender inequities, and motivating responsible sexual behaviour. The PPTCT program will implement a strategy to involve men in antenatal and postnatal care. This will require initial research to understand the factors that will encourage men to accompany their partner to the antenatal clinic. Where necessary, the program will undertake make the structural changes to the ANCs necessary to make them inviting to men. The program will work with other community partners to educate men about the benefits of attending ANC visits with their partner.

While this is an element of research, Rural Initiative programs actively address gender inequality also by trying to empower men to become actively involved in caring for their children and for their own health and the health of their spouses. This is achieved through “Staying negative couples counselling” in the PPTCT program. Antenatal women who test negative for HIV are invited to attend counselling with their male partners regarding sexual health, particularly HIV prevention, as well as elements of family health. This involvement of men at the antenatal setting both serves to enhance equality between the male and female partners and potentially protect women of the most vulnerable age for HIV infection from that fate.

5.3 Greater Involvement of People Living with AIDS (GIPA)

The greater involvement of PLHIV has long been recognised as an important principle in the HIV response. The reality however is that GIPA in PNG remains sub-optimal due to both a lack of meaningful inclusion in all aspects of the HIV response, and limited capacity of PLHIV and advocacy organizations.

In Phase II, CHAI will continue to build on the work started with Mini Vava, the support group for people living with HIV in EHP. Programs that engage PLHIV as expert patients to provide counselling and support to new ART patients, provide parent-to-parent counselling, to assist with patient monitoring in the village and livelihood enhancement will be established. Income generation programs that benefit people living with HIV will also be continued.

5.4 Critical Risk Factors

The Risk Management Matrix (Annex 5) details the key CHAI PNG Phase II-related risks, risk ratings, actions and responsibilities. Annex 5 groups risks into two main categories: risks that affect all components and component-specific risks. The design team worked with CHAI staff to generate the risk management matrix that is accordingly saturated with the risk- and response experience from CHAI PNG Phase I.

The identified risks fall under the following major substantive categories:

- Economic factors (e.g., Exxon Mobile Liquid Natural Gas project inflates the cost of goods, fuel, travel, accommodation and human resources and draws quality staff away from current health and other employment)

- Safety and security issues constrain CHAI work in many areas (e.g., tribal conflict and violent crime)
- Supply-side risks:
 - Insufficient funds for procurement of ARVs, OI drugs etc. (e.g., applications to GFATM COS and Round 10 not approved)
 - Supply Chain Management issues (e.g., stock-outs of ARVs, OI drugs, test kits, etc.)
 - CHAI PNG Phase II partner organizations and individuals do not fully cooperate with the expanded program for various reasons including under-developed organizational systems, management/staff attitudes, staff competence, and staff turnover
 - Limited capacity to adequately manage and administer funds at provincial level
- Demand-side factors
 - Patient demand outstrips supply (e.g., the burden of disease - HIV, other STIs and co-infections such as TB – increases rapidly and current level of health services cannot cope)
 - A high lost to follow-up (LFTU) rate will persist in Rural Initiative patient cohorts due to as yet unknown factors, likely related to cultural issues, including gender factors, or urban settlement lifestyle

The set of responses listed in Annex 5 represent a broad and flexible mix of actions that fall under the following headings:

- Budgeting
- Partner-selection (e.g., 'choose the right partner to act as provincial financial manager')
- Training
- Advocacy
- Technical support and advice
- Ongoing communication, networking and coordination with partners
- Ongoing program monitoring and assessment

See Annex 5 for a full description of CHAI PNG Phase II's Risk Management strategy.

5.5 Child Protection

CHAI Phase II will fully comply with Australia's child protection requirements, and report as required by AusAID. In addition, CHAI PNG is developing a Child Protection Policy for all staff who has had or will have direct contact with children under the age of 18. This will include extensive background checks and will begin with the start of Phase II and will be inclusive of all staff that works on CHAI sponsored projects at a site level. CHAI PNG's policy will also meet AusAID's mandatory child protection compliance standards for contractors and NGOs.

5.6 Anti-corruption Measures

CHAI Phase II will fully comply with Australia's anti-corruption requirements and will be guided by AusAID PNG. The program will report as required.

5.7 Aid Effectiveness

The overarching objective of CHAI is to ensure that all programs are left with strong local capacity. The Paris Declaration on Aid Effectiveness (2005) and the Accra Agenda for Action (2008) underpin CHAI's core approach and the foundation for its partnership with the National Department. It ensures fulfilment

of a commitment to allow GoPNG to define the national priorities, use government systems to implement NDoH's programs, and ensure alignment with other donors to harmonize the approach (as evidenced by collaborations with UNICEF, Catholic Health Services, and the Asian Development Bank). This guarantees a results-based approach, and holds the organization accountable for both positive and negative program outcomes.

5.8 Monitoring and Evaluation

Main Elements

The M&E Framework presented is informed by recommendations of the 2009 evaluation (Heywood 2009) and by AusAID's management response (AusAID 2009). The backbone of the M&E Framework is a log frame that includes indicators with targets. In most cases, the indicators have annual targets. The design team and CHAI staff developed the log frame and indicators – and the M&E Framework more generally – with NDoH input and sign-off. The log frame is presented in Annex 1.

Indicator-based program monitoring will inform the Quality at Implementation Reports. Two will be submitted to AusAID. A progress review will be conducted in 2012 (Year Two) to assess progress and provide recommendations for any needed adjustments for Stage Two (2013-2015).

In addition, as described in CHAI PNG Phase II's log frame and work plan, operational research will also be conducted. This research will focus on potential areas of best practice supported by CHAI PNG Phase II worthy of replication, scaling-up, and sharing the lessons learned nationally and internationally. The operational research is designed, then, to inform evidence-based advocacy for changes to policy, practice guidelines and practice.

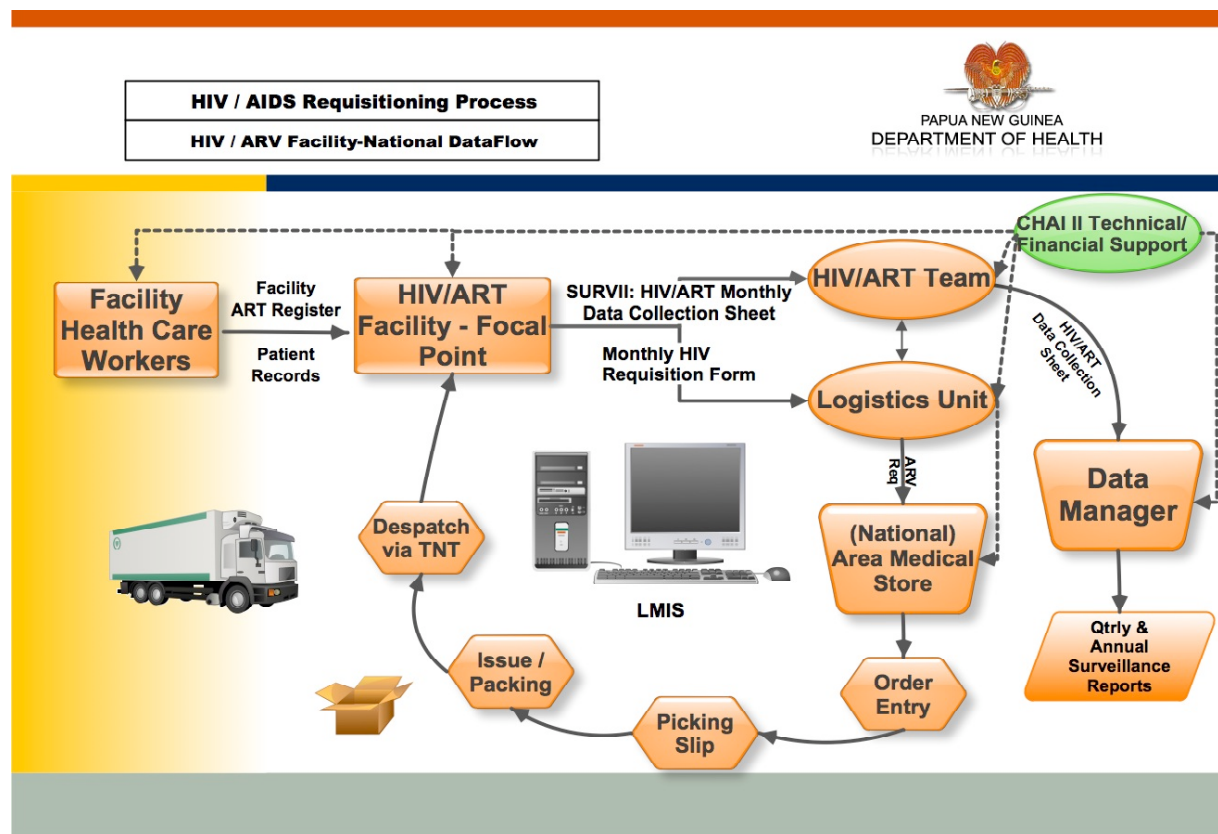
Indicator-Based Monitoring

There are two types of CHAI PNG Phase II indicators: those that rely on data routinely collected and reported each month by health facilities to national-level NDoH and those that rely on data collection by CHAI staff. Most of CHAI's log frame indicators fall into the former category and the data relevant to these indicators are routinely entered by health care workers into facility-level case records, variously described in the log frame's 'means of verification' column as, for example, 'patient records', 'patient charts', 'CD4 site logbooks', or 'clinical records/lab forms'. These case records are summarised into a variety of monthly summary reports by facility focal points.

CHAI PNG Phase II, similar to CHAI PNG Phase I, will support NDoH information-system personnel to improve the quality and completeness of data entered into the various facility-level forms that are within CHAI's scope and extract data from those forms to monitor the progress of the CHAI program towards its objectives and assist facility-level staff to monitor and analyse their service data to inform future service delivery.

Figure 11 below provides more detail on the dataflow of two particular areas, HIV/AIDS-related requisitions and patient data, from facility to national level and depicts CHAI's role in providing technical advice and funding for two positions (a second AMS clerk and a Logistics Officer to be seconded to NDoH).

Figure 11 National HIV/AIDS Requisition and ARV Dataflow



Non-Indicator-Based Monitoring

Quantitative indicators do not tell the whole story about program success and challenges. For example, changes may occur that are not explicitly covered by the objectives and indicators. For this reason, at least three studies are proposed using focus groups, semi-structured, and/or open ended interviews.

These surveys will collect information on, and from, CHAI's clients including a description of:

- Services/assistance received.
- Client feedback on the services including suggestions for improvement.
- Client identification of changes (positive and negative) flowing from assistance (that is, program effects and causes).
- Quality of linkages and collaboration between CHAI II and implementation partners.

The surveys will target particular aspects of CHAI II program complementary to the focus of CHAI II's Operational Research program so that cause-and-effect information is available to supplement the numeric indicator data on changes occurring.

M&E Human Resources

CHAI I mainstreamed M&E functions into the work of all technical and management staff. There were no additional, specialised long-term or short-term positions established for program M&E, including the creation and maintenance of a program information system. CHAI II will have an in-country local M&E position (LT M&E Officer) who will be supported by an M&E advisor from an institutional Care Partner.

The local M&E position should include the following responsibilities:

- Administer the indicator database including data entry and generation of summary tables.
- Contribute to production of six-monthly reports and the Activity Completion Report.
- Support the cost-effectiveness study that AusAID may fund in year four.

The researchers for the Operational Research functions under Component Five will be primarily staff members of the Clinton Foundation's global CHAI network whose expertise matches the specific research-evaluation topic.

As noted above, the data for most CHAI II indicators will be collected and recorded by health-facility staff and ultimately submitted to the NDoH's Surveillance Unit Data Manager. NDoH is the primary provider of the financial and human resources for this data collection and data flow.

Capacity Development

M&E-related capacity-development has been mainstreamed into each component of CHAI PNG Phase II. For example, most of the activities under Component One, output 1.1 focus on improving the NDoH Logistics Unit capacity to track past demand and predict future demand for medications and other commodities, to track emergency and routine orders in and out of the national warehouse, to monitor drug expiry dates etc:

- Establish and use Logistics Management Information System (LMIS) to quantify demand HIV medications and other commodities
- Use LMIS against other forecasting tools to aid in decision-making process
- Track incoming and outgoing orders in LMIS
- Use report-out function in LMIS to determine actual distribution data monthly
- Log emergency orders in LMIS
- Log expired drugs

Similarly, Component Two continues its support of the External Quality Assurance System (EQAS) and National Quality Assurance System (NEQAS) for monitoring the quality of laboratory testing that CHAI PNG Phase I helped to establish in PNG. Phase II continues CHAI's focus on helping to strengthen NDoH's monitoring of the health of HIV+ patients through CD4 and viral load tests. Component Two also focuses on promoting the use of Early Infant Diagnosis methodology as a tool for monitoring of PPTCT services at a site level. – i.e., effective counselling and testing of pregnant women and effective case management of HIV+ pregnant women will lead to the early screening of exposed infants for HIV and enrolment in ART if infected.

Component Three includes a focus on improving case management and patient flow within and between health facilities providing paediatric ART, PPTCT and EIT services and this focus involves improving patient information systems. Activity 3.3.4 is explicitly M&E-focused: "Develop and implement strategies to improve data collection and information dissemination at all four sites (PMGH, Goroka, Mt Hagen & Lae)".

Component Four's M&E emphasis is most evident in Output 4.2 focused on strengthening linkages across continuum of care. Five of the seven activities under 4.2 are designed to strengthen NDoH monitoring of service providers (for contact purposes), laboratory consumables (for stock management) and/or patients (for case management):

- Maintain VCT counsellor databases and facilitate utilisation of their skills through Health Fairs and other events
- Maintain centralized Determine Strip ordering to the widest extent possible within the Rural Initiative Provinces for quality monitoring and follow-up of reactive people
- Conduct Case Management meetings and reporting to maintain low level of lost to follow-up between clinical areas of the Hospital such as ANC/paediatrics and ANC/Adult

- Maintain patient registry, conduct quarterly ART Providers meetings and other review activities to assure effective patient transfers and reduce lost to follow-up
- Establish Rural Initiative Database (intranet)

Four of the five activities listed above focus on establishing or maintaining NDoH databases (that is, all activities listed immediately above, except the Rural Initiative database).

One of the major focuses of Component 5 is monitoring and evaluation. The focus of Output 5.1 is on strengthening monitoring and evaluation of the CHAI model for the purposes of learning, model improvement and replication. The focus of Output 5.2 is on improving the capacity of HIV data managers to analyse national, provincial and district level testing, care and treatment data.

Component 6 has an internal M&E emphasis, especially Output 6.1, which focuses on the rollout of Phase II activities. This necessitates ongoing quality monitoring and evaluation of CHAI's own program. The 'internal' capacity development element of CHAI's own M&E Framework is the recruitment and training of its M&E staff by CHAI's managerial and technical staff.

Six-Month Reports

AusAID expects all NGO projects in PNG – including CHAI – to submit six-month reports using AusAID's Quality-At-Implementation (QAI) template and to submit financial reports using an AusAID-provided financial report template. AusAID's policy of requiring NGO programs to use standard reporting forms promotes consistency of reporting within and across initiatives and contributes to addressing one of the problems identified by the 2009 evaluation team (namely, the lack of consistency in reporting). Table 4 below should be read in tandem with the full AusAID QAI template.

Table 4: QAI Topics and Data Sources for CHAI II Six-Month Reports

Topics and Criteria	Data Source
Description of the Initiative / Activity	<i>Design document updated by annual plans and reports</i>
1. Relevance	<i>Design document</i>
2. Effectiveness	<i>Indicator database (achievement of indicator targets at output, component objective and purpose levels) and three surveys</i>
3. Efficiency	<i>'Value for money': budget data; 'Delivery on time': planned activities v. implemented activities</i>
4. Monitoring and Evaluation	<i>M&E Framework as implemented (i.e. describe the M&E-foundation of the evidence and assessments presented in the QAI)</i>
5. Sustainability	<i>Design document for sustainability logic built into design and operational research findings</i>
6. Gender Equality	<i>Gender Equality indicators, operational research and gender-equality sample outcome checklist</i>
7. Cross-Cutting Issues and Commitments	<i>Cross-references between 'commitment' such as UNGASS, MDGs, the Accra Agenda for Action/Cairns Compact, anti-corruption, child protection etc.</i>
8. Risk Management	<i>Risk Management Matrix</i>
9. Current Issues	<i>Any other issues of which CHAI II management and staff and partners are aware.</i>
10. Key Results	<i>CHAI management presentation of what it considers to be the most significant results achieved in the reporting period</i>

M&E Data Utilisation

The phrasing of CHAI's component objective relating to project management ("CHAI Phase II managed effectively") is designed to connect the assessment of CHAI's management to the success of CHAI in achieving its annual indicator targets and end-of-project targets at purpose, component objective and output levels. The entire CHAI II set of indicators are designed to enable the monitoring, assessment and reporting of CHAI's effectiveness, that is, the degree to which it has meet its objectives. CHAI's operational research component is designed to promote the utilisation of M&E data for the purposes of policy, planning and practice at national, provincial, district and facility level.

M & E of Gender-Equality

The main elements of monitoring the gender-equality dimensions of CHAI PNG Phase II are:

- Sex- and age- disaggregation of health outcome and service-utilisation data for clients of services supported by CHAI II
- Special focus on monitoring the partner counselling sub-program through:
 - The indicator 'number of HIV- antenatal mothers who received counselling with their partners regarding sexual health VCT for partners, infant feeding and other family health topics'
- Content analysis of CHAI data on program clients and results (especially indicator data) using AusAID's gender-equality sample outcomes template. CHAI PNG staff have already undertaken a sophisticated analysis of selected gender-equality benefits of CHAI's approach (CHAI PNG 2010)

External Reviews and Evaluations

Through Terms of References developed by NDoH, AusAID, and CHAI there will be:

- An independent progress review conducted at the end of Year Two, 2012, to assess progress and assist with planning adjustments for Stage 2 (2013-2015)
- An Independent, external evaluation will be conducted Year Five (2015) to assess Phase II and gauge effectiveness of CHAI's programs.

5.9 Sustainability Issues

A major emphasis in Phase I for CHAI is an emphasis on scalable, sustainable approaches to optimising the health system. Rather than approaching Phase II in a different manner, CHAI will continue to seek to engage strategies that are catalytic and sustainable, so that systems can endure and function in the absence of donor or implementing partner support. Fundamental to CHAI's approach, sustainability is addressed by:

- Keeping NDoH as the lead partner and implementing all program activity through national, provincial, or district facilities that are government-operated. CHAI does not set up parallel systems for service delivery
- Remaining as a technical support and resource for NDoH and a discrete donor project
- Maintaining project costs within GoPNG ranges
- Implementing in alignment with national strategies, guidelines, and policies
- Providing technical expertise for catalytic interventions that can be brought to scale if deemed effective
- Integrating models which have proved successful into other potential funding streams; an example is the integration of the Rural Initiative and Case Management models into the Global Fund Round 10 application

With respect to specific programmatic areas, CHAI seeks sustainability in the following ways:

Laboratory

- Intensive training of laboratory staff with ongoing mentoring and train the trainer activities to transfer skills
- Inclusion of EID, Viral Load, and HIV Quality Assurance commodities and personnel costs into the GFATM Round 10 Application
- Working with NDoH and CPHL to establish guidelines, policies, and SOPs in areas such as EID and QA
- The formation of technical working groups that can serve as important arenas for troubleshooting ongoing challenges. For example, CD4 technical working groups can be invaluable in preventing operator error and ensuring less machine down time
- Helping to lower the costs of reagents and/or consumables so that costs are reduced for NDoH

Supply Chain Management

- Seeking support from GoPNG or GFATM Round 10 for paediatric ARV commodities post-UNITAID funding
- Training NDoH staff on the forecasting and procurement processes for paediatric and EID related commodities
- Fostering the development of information management systems to improve stock level management and procurement

- Development of SOPs, policies, and guidelines to improve supply chain management

PPTCT/Paediatrics

- National and site level training and mentoring to both increase the number of health care workers in care and treatment of children and to improve the overall quality of care
- Working with the NDoH to establish national guidelines, policies, and training curriculum for paediatric HIV services
- Fostering facility level ownership of paediatric HIV services through ongoing mentoring, supervision, and the development site specific scale-up plans
- Train a core group of local clinical experts who can serve as national paediatric mentors at key sites
- Work with NDoH to establish national level program management of paediatric HIV

Rural Initiative

- As a practical implementation of the *Minimum Standards for HIV/AIDS Care and Treatment (2007)*, the Rural Initiative provides important cost models that can be factored into to future NDoH budgets for scale-up activity.
- Program design utilizes and optimises what exists in the Provincial Health systems. The key to successful implementation has been the motivation, organization, and focus of the manpower involved. With proper management at the provincial level, job satisfaction from decent work conditions and good patient outcomes, as well as sustained interest at the national level, the sustainability of the model is likely.
- The model is most demanding of the human resources, and less so of the financial ones. Because the Rural Initiative re-builds functionality through sharpened focus and cogent clinical pathways, it does not rely on unrealistic sums of money to be available for it to work.
- Ensuring the inclusion of the model in the GFATM Round 10 Proposal so that the intervention can be expanded to other high prevalence provinces and districts

Threats to Sustainability of HIV Care and Treatment Services

PNG's unsuccessful application for GFATM Round 9 coupled with increasing concern of fewer resources in the area of global health finance means that there are important threats to the sustainability of HIV care and treatment services.

Loss of funding for ART

- Should the GFATM Round 10 proposal also prove unsuccessful, the entire funding for both adult and paediatric HIV care and treatment services will be in jeopardy. In addition, scale up funding for high prevalence provinces will also be lacking
- Lack of timely GoPNG budgetary allocation to NDoH to purchase needed ARVs in the absence of GFATM support will also endanger those needing treatment.

Human Resource Funding

- Both the quantity and level of training of providers at the district level need attention. These extra positions can be created and filled rationally do that there is not frivolous hiring for duplicated roles. At the moment, those providing HIV treatment at the district level most often are also responsible for the entire health centre, which is an unsustainable model for HIV care and treatment.

Infrastructure Limitations

- Water, electricity, and sanitation are lacking at many of the district level facilities. Without the tools for basic hygiene, it will be difficult to provide HIV services couched within primary health at this level.

- Many health centre facilities lack the infrastructure, equipment and personnel to carry out the laboratory services needed. Where these conditions persist, what remains of public health services will collapse

Apart from issues in health financing, threats to sustainability exist in the lack of enough support for carrying out mandated programs within the NDoH itself. With an escalating epidemic and increased need for national level coordination of resources, more capacity is required to sustain and scale-up an effective response in the area of HIV service delivery.

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ANNEX 1: LOGICAL FRAMEWORK MATRIX

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
	GOAL Reduced transmission of HIV and other STIs and minimise the impact on individuals, families and communities in selected localities	Percentage of infants born to HIV-infected mothers who are infected (UNGASS indicator #25)	To be announced (TBA)					Patient records, facility ART register	National targets will be developed national indicators in the NHS 2011-2015 M&E Framework being developed at same time as this CHAI II design
		Percentage of adults, and children with HIV still alive and known to be on treatment 12 months after initiation of antiretroviral therapy (UNGASS indicator #24)	TBA					Patient records, facility ART register	As above
	PURPOSE Improved health outcomes for patients and clients of CHAI-supported services	SURVIVAL: Percentage of adults, adolescents and children with HIV still alive and known to be on treatment 12 months after initiation of antiretroviral therapy in Rural-Initiative sites increases between 2010 and 2014 (UNGASS indicator #24 with 'adolescents' added to UNGASS indicator wording and indicator scope limited to CHAI II supported sites)	≥ 70%	≥ 75%	≥ 80%	≥ 82%	≥ 85%	Chart review	Improved HIV services will lead to decreased mortality during first year of ART because HIV cases will be found before onset of AIDS and thus ART will less often be used as a salvage therapy
		TB MORTALITY: Annual TB death rate among HIV patients of CHAI-supported health facilities during CHAI II lifetime compared to 2010 baseline	Lower than baseline level					Provincial epidemiological surveillance data and HIV patient chart review	HCWs will be able to implement use of TB prophylaxis, there will be no supply chain problems with the INH, and this will lead to fewer TB infections and improved clinical outcomes in the patient base, as well as in the population as a whole.
		NUTRITION: Percentage of ART patients with BMI increase of >1 at CHAI-supported health facilities	> 60%	> 70%	> 75%	> 80%	> 80%	Chart review	Case management and improved clinical services will result in significant weight gains
		LTFU RATES RI: Lost to Follow-up Rates among RI patients (adult, PPTCT, Paediatrics)(LTFU = patient has missed three appointments in a row, over a period of three months; Efforts to contact patient have been unsuccessful.)	< 20%	< 17%	< 15%	< 15%	< 15%	Case Management chart review	Majority of drivers of loss can be eliminated through good counselling and removal of material obstacles to care
		LTFU RATES	< 20	< 17%	< 15%	< 15%	< 15%	Case	Majority of drivers of

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
		PPTCT/PEDS: Lost to Follow-up Rates among PPTCT/PEDS patients at PMGH Well Baby Centre intervention						Management chart review	loss can be eliminated through good counselling and removal of material obstacles to care
1	Component 1 Objective SUPPLY CHAIN MANAGEMENT Improved non-clinical capacity within supply chain management to support scale-up of HIV testing, care and treatment	Endline targets for all four key SCM indicators (stockouts, emergency orders, forecasting, turnaround – see below) completely achieved.	See below					See below	See below
1.1	Outputs FORECASTING, PROCUREMENT AND DISTRIBUTION: Improved forecasting, procurement, and distribution capacity through improved data integrity and data driven decision-making	EMERGENCY ORDERS: % reduction in emergency orders annually placed at central level compared to 2010 baseline (figure to be calculated when LMIS is established in Sept 2010)	10% reduction annually					Logistics Management Information System (LMIS)	Emergency orders will be tracked in LMIS
		TURNAROUND TIME: Turnaround time for orders placed with AMS within 7 days	40%	50%	60%	70%	70%	LMIS	Incoming orders and outgoing shipments will be recorded in LMIS, current volume cannot be handled by current staff level of performance
		PATIENT ARV DEMAND: % of patient-level demand for first and 2 nd line paediatric ARVs met annually (calculated by CHAI patient/drug demand formula)	90% of reported need met annually between 2011 and 2014					NDoH surveillance	Commodities are available
		EID COMMODITIES: % of reported need for PCR tests annually are fulfilled	90% of reported need met annually between 2011 and 2015					Laboratory statistics	Lab consumables are available
1.2	NATIONAL LOGISTICS STRATEGY: Standardized National Logistics Strategy adopted by	PROCUREMENT ALIGNMENT: Paediatric and adult procurement aligned into single process	Process adopted in Q1 2011 and revised annually					Instructions exist in SOP	UNICEF acts as procurement agent for paediatrics on behalf of NDoH
		INTERNATIONAL TENDERS: SOP for international tendering	SOP adopted in Q1 2011 and revised annually					SOP distributed	SOP is approved by Advisor

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
	NDOH to roll out to provinces	process developed and adopted						in NDoH	
		SOPS: SOP for forecasting, procurement, and distribution process adopted	SOP adopted in Q1 2011 and revised annually					SOP distributed in NDoH	SOP is approved by Advisor
		PROCUREMENT COMMITTEE: Procurement committee established	By mid-year 2011 committee meets bi-annually					Committee members identified and participate in meetings; meeting minutes	Advisor charges individuals within NDoH to participate in the procurement committee
		QA: AMS improves score on warehouse quality checklist between baseline in 2010 and midline in 2012 and maintains that improvement annually	Target: 10% improvement between baseline and midline and maintenance of 2012 level through to 2015					AMS annual Quality Assessment	Human, financial, physical and spatial resources available to support quality improvement
		SATISFACTION SUREYS: % of ART sites that report an increase in the service-satisfaction rating for national logistics service	15% of sites	25% of sites	35% of sites	45% of sites	50% of sites	Survey statistics analysed by CHAI and presented to department	NDoH will approve use of survey
2	Component 2 Objective LABORATORY: Increased utilisation of quality HIV testing and monitoring services nationally	EID: Increased annual number of infants that receive EID tests annually compared to baseline (2010)	1000	1250	1500	1750		Lab forms / Database	Good laboratory and clinical management, reliable supply of reagents and consumables, price reduction in reagents, program taken up well at sites, gradual funding take over from GoPNG for HR and consumables, reliable HR and supervision
		POC HIV TESTING: Increased annual number of people receiving quality assured point of care HIV tests compared to baseline (2010)	20000	30000	40000	50000		VCT/PICT site logbooks	
		CD4: Increased annual number of HIV Positive people receiving CD4 tests compared to baseline (2010)	12000	13000	14000	15000		CD4 site logbooks	
2.1	Outputs EID: Expanded and improved Early Infant Diagnosis (EID) of HIV	PROVINCES: Number of provinces with service-provider sites collecting and reporting data on number and type of PPTCT interventions increases between 2010 and 2015	2010 Baseline: 9 (Central/NCD, East New Britain, Madang, Morobe, EHP, WHP, SHP, Simbu and Oro) 2015: endline target: 22					Clinical Records/Lab forms	
		STAFF: Number of clinical staff trained in EID nationally	200	300	350	400		Training Log sheets/Data	
		PARTICIPATION: Number of sites "actively participating" in EID	30	50	70	90	120	Training Log sheets / Site survey /	

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
		program ("active participation" defined in EID service-provider checklist)						Checklist	
		SAMPLE QUALITY: % of DBS samples annually sent by each EID site to Goroka Hospital (GH) lab and CPHL that are valid and testable	≥ 80%	≥ 85%	≥ 90%	≥ 90%	≥ 95%	Laboratory Database	
		EQAS: % test-accuracy score achieved by GH lab and CPHL in quarterly PCR-EQAS blinded retests of 10 DBS samples sent by Atlanta CDC	By 2015, both laboratories achieve a test score of 95% or more in each quarterly EQAS exercise.					Laboratory Database	
			≥ 80%	≥ 85%	≥ 90%	≥ 90%	≥ 95%		
		NUMBER OF EID TESTS: No. EID tests conducted annually nationally disaggregated by sex and province	2000 tests/year	2000 tests/year	2000 tests/year	2000 tests/year	2000 tests/year	Lab forms/Database	
2.2	QA: Robust quality assurance system established and implemented	EQAS SEROLOGY: % 'correct test result' or test-accuracy score achieved by all sites in all EQAS exercises for HIV serology	No site falls below 85% score by 2012, 95% by 2015					Review EQAS results reports and database	Reliable logistics and supply chain management for HIV testing kits, quality management and assurance run at site and central level, selected harmony for development of new lab testing algorithm and ANC algorithm, good management of implementation of Operational Research Unit at CPHL, synchronization with selected sites on quality assurance activities, reliable HR and supervision, gradual funding take over from GoPNG for HR and consumables
		EQAS HIV TESTING: Number of sites nationally participating in EQAS for HIV testing		≥ 60		≥ 120	≥ 200	Review EQAS results reports and database	
		PARTICIPATION: % sites nationally participating in blinded retesting	≥ 80%	≥ 85%	≥ 95%	≥ 100%	≥ 100%	Review Central retesting log books	
		RETESTING ACCURACY: % correct results for blinded retesting achieved by 100% of sites participating in all blind retesting exercises	85% by 2011, 95% by 2012 (i.e. no site falls below a test-accuracy score of 85% by 2011 and 95% by 2010 in regular blind retesting exercises).					Review Central retesting log books	
		CD4 PARTICIPATION: % sites with CD4 equipment that participate in CD4 EQAS	≥ 80%	≥ 85%	≥ 90%	≥ 95%	≥ 95%	Review EQAS results reports and database	
		EQAS CD4: % 'correct test result' or test-accuracy score achieved by all sites in all CD4 EQAS test exercises conducted in the course of each year [Lowest acceptable accuracy score achieved by any site in any CD4 EQAS test by year]	≥ 75%	≥ 80%	≥ 85%	≥ 90%	≥ 95%	Review EQAS results reports and database	

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
		ACCREDITATION: Number of laboratories reaching accreditation and maintaining accreditation standards (cumulative)	0	1	1	2	3	Lab management meetings	
2.3	HIV MONITORING: A system for monitoring HIV+ patients developed and implemented	CD4: Number of lab sites performing CD4 testing	≥ 20	≥ 25	≥ 30	≥ 35	≥ 40	Collect data from CD4 site reporting form	Viral load program taken up well at clinical sites, gradual funding take over from GoPNG for HR and consumables, reliable HR and supervision, good management of drug resistance, surveillance and testing conducted
		VIRAL LOAD: Number of viral load tests/year	≥ 500	≥ 750	≥ 1000	≥ 1500	≥ 2500	Collect data from Viral Load Laboratory Data Base/Log	
		MICROBIOLOGY: Number of sites performing microbiology testing	≥ 1	≥ 3	≥ 4	≥ 6	≥ 10	Collect data from provincial lab on microbiology testing	
		HEMATOLOGY: Number of sites performing haematology	≥ 5	≥ 10	≥ 12	≥ 15	≥ 20	Collect data from provincial lab on haematology testing	
		BIOCHEMISTRY: Number of sites performing biochemistry	≥ 5	≥ 10	≥ 12	≥ 15	≥ 20	Collect data from provincial lab biochemistry testing	
3	Component 3 Objective PPTCT AND PAEDIATRIC ART: Increased service utilisation of improved and expanded PPTCT and paediatric ART	RECEIVING PROPHYLAXIS: Percentage of HIV-positive pregnant women at CHAI supported sites who receive antiretroviral medicines to reduce the risk of mother-to-child transmission (UNGASS indicator #5)	≥ 10%	≥ 20%	≥ 30%	≥ 40%	≥ 50%	National Patient Database, ANC Registry book, and PPTCT Log book	PHA will support the model and sustainability of these new PPTCT and paediatric ART positions, plans for new buildings and extensions will be approved, there will be enough resources to adequately implement this program, there will be enough trained health care providers to implement these programs, national guidelines will be amended, CHAI will have adequate training and mentor staff, and training curriculum developed and approved.
		EIT: Percentage of children receiving early infant treatment as a result of the revised guidelines for treatment now being followed	≥ 10%	≥ 15%	≥ 20%	≥ 30%	≥ 35%	National Patient Database, Paediatric ART Registry book, and DBS Registry book	
		PARTNER TESTING: Percentage annual increase in male testing in CHAI-supported PPTCT sites	≥ 10%	≥ 15%	≥ 20%	≥ 25%	≥ 30%	National Patient Database, Paediatric Clinic Registry book, and	

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
								PPTCT Log book	
3.1	Outputs ROLLOUT: Increased number of sites providing PPTCT and paediatric ART services	INCREASE SITES: Number of sites (provincial hospitals) offering services	2	3	4	5	5	Site registry	<i>See Component Objective assumptions</i>
		COORDINATION: Number of national and provincial coordination meetings annually	2	2	2	2	2	Meeting reports	
3.2	IMPROVED PPTCT: Improved quality of PPTCT services at high prevalence sites	QA CHECKLIST: Average annual score on PPTCT and Paediatric ART service quality assessments	≥ Score 20%	≥ Score 40%	≥ Score 60%	≥ Score 70%	≥ Score 80%	PPTCT and Paediatric ART checklist (Clinical Care for Children - Quality Assessment Checklist)	<i>See Component Objective assumptions</i>
		PATIENT RETENTION: Percentage of patient retention in all PPTCT sites	≥ 30%	≥ 40%	≥ 50%	≥ 60%	≥ 70%	National Patient Database and PPTCT Log book	
		WOMEN TESTED: Percentage increase in women tested annually in CHAI-supported sites	≥ 5%	≥ 10%	≥ 10%	≥ 10%	≥ 10%	National Patient Database, PPTCT Log books, ANC Registry, and Patient Charts Reviews	
		ART PROPHYLAXIS: Percentage increase of women receiving ART prophylaxis annually	≥ 20%	≥ 30%	≥ 40%	≥ 50%	≥ 60%	National Patient Database, PPTCT Log books, ANC Registry, and Patient Charts Reviews	
3.3	IMPROVED PAEDIATRICS : Improved quality of clinical care for HIV exposed and infected children in CHAI-supported sites	INCREASED QUALITY SITES: Number of CHAI supported sites (provincial hospitals) in which quality care and treatment has improved in past 12 months	2	3	4	5	5	National Patient Database, Paediatric Registry books, Patient Chart reviews, didactic training assessments, group discussions, direct observation through mentorship, Clinical	<i>See Component Objective assumptions</i>

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
								Care for Children – Quality Assessment Checklist	
		EID: Percentage of infants receiving early infant diagnosis in the past 12 months	≥ 10%	≥ 20%	≥ 30%	≥ 40%	≥ 50%	National Patient Database, DBS Registry books, and Patient Charts Reviews	
		PATIENT RETENTION: Percentage of patient retention in all ART paediatric sites	≥ 30%	≥ 40%	≥ 50%	≥ 60%	≥ 70%	National Patient Database, DBS Registry books, and Patient Charts Reviews	<i>See Component Objective assumptions</i>
		CHILDREN ON TREATMENT: Increased number of new paediatric ART clients annually compared to 2010 baseline of 125 children on ART	≥ 130	≥ 135	≥ 140	≥ 145	≥ 150	National Patient Database, DBS Registry books, and Patient Charts Reviews	
4	Component 4 Objective RURAL PROGRAMS Increased service utilisation of improved system of quality HIV testing, care and treatment in selected rural localities	SURVIVAL: Percentage of adults, adolescents and children with HIV still alive and known to be on treatment 12 months after initiation of antiretroviral therapy in Rural-Initiative sites increases between 2010 and 2014	<i>See Purpose level targets</i>					<i>See Purpose level means of verification</i>	<i>See Purpose level assumptions</i>
		TB TREATMENT: Percentage of estimated HIV-positive incident TB cases that received treatment for TB and HIV	≥ 70%	≥ 75%	≥ 85%	≥ 90%	≥ 90%	TB treatment monitoring cards and HIV patient chart review	Rural Initiative will be able to influence the behaviours in the Provincial TB clinic regarding filling out the HIV portion of the TB treatment cards thoroughly, and that information will be able to be shared between programs accurately.
		PAEDIATRICS AT DISTRICT LEVEL: Number of children on ART monitored at District level in Rural Initiative	1	2	5	8	13	ART Provider meetings and monthly report	One or more District ART providers will be willing to do this.

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
		Provinces							
		COUPLES COUNSELING: Number of HIV- antenatal mothers each quarter who received counselling with their partners regarding sexual health VCT for partners, infant feeding and other family health topics	50 per qtr	75 per qtr	100 per qtr	120 per qtr	150 per qtr	Counsellor documentation	ANC staff will be able to persuade antenatal women to come back for counselling sessions with their partners.
		PAEDIATRIC MALARIA: Proportion of HIV patients under 5 or enrolled in PPTCT sleeping under insecticide-treated bed nets	> 80%	> 85%	≥ 90%	≥ 90%	≥ 90%	Case Management chart review	Issuing insecticide treated double width bed nets to all paediatric patients and PPTCT patients will lead to those families using them.
4.1	Outputs RURAL HEALTH CARE SERVICES: Improved quality Health Care Service (HCS) in selected rural sites	PPTCT SERVICES: Percentage of PPTCT mothers receiving full complement of services at District level	> 3%	> 5%	> 6%	> 8%	> 10%	ART Provider meetings and monthly reports	RI will be able to facilitate the placement of HCWs at the District level who have a higher level of skill in labour and delivery than currently available.
		PAEDIATRICS AT DISTRICT: Number of children on ART monitored at District level	<i>See Component Objective targets</i>					<i>See Component Objective Means of Verification</i>	<i>See Component Objective assumptions</i>
		COUPLES COUNSELING: Number of HIV- antenatal mothers each quarter who received counselling with their partners regarding sexual health VCT for partners, infant feeding and other family health topics	<i>See Component Objective indicators</i>					<i>See Component Objective Means of Verification</i>	<i>See Component Objective assumptions</i>
4.2	LINKAGES: Increased linkages across continuum of care	PICT: PICT rates in STI and TB patients (% of STI and TB patients offered HIV testing and counselling)	≥ 60%	≥ 65%	≥ 70%	≥ 75%	≥ 80%	Chart Review	Better rates of PICT will create better links to HIV Services
		TB HIV COINFECTION: Incidence rates associated with tuberculosis among HIV patient base	< 50%	< 40%	< 35%	< 30%	< 30%	Provincial epidemiologic al surveillance data and HIV patient chart review	HCWs will be able to implement TB prophylaxis, there will be no supply chain problems with the INH, and this will lead to fewer TB infections and subsequent poor clinical outcomes in the patient base, as well as in the population as a whole.
		TB MORTALITY: TB death rate among HIV patients of CHAI-supported health facilities	<i>See Purpose level indicators and targets</i>					<i>See Purpose level Means of Verification</i>	<i>See Purpose level assumptions</i>

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
		TB TREATMENT: Percentage of estimated HIV-positive incident TB cases that received treatment for TB and HIV	See Component Objective level indicators					See Component objective level Means of Verification	See Component Objective assumptions
4.3	ADHERENCE AND RETENTION: Increased adherence and retention for children, adolescents and adult patients in selected sites	LTFU RATES RI: Lost to Follow-up Rates among RI patients (adult, PPTCT, Paediatrics)	See Purpose level indicators					See Purpose level Means of Verification	See Purpose level assumptions
		NUTRITION: Percentage of ART patients with BMI increase of >1 at CHAI-supported health facilities	See Component Objective level indicators					See Component objective level Means of Verification	See Purpose level assumptions
4.3		PAEDIATRIC MALARIA: Proportion of HIV patients under 5 or enrolled in PPTCT sleeping under insecticide-treated bed nets	See Component Objective level indicators					See Component objective level Means of Verification	See Component Objective assumptions
		QUALITY OF LIFE: Quality of Life of RI ART patients	Better than non-RI patients (not evaluated annually)					Case-Control study using SF12v12	These studies can be done in series and will be IRB approval
4.4	PROVINCIAL LABORATORIES: Improved laboratory quality and scope of services in selected RI sites	ANTENATAL TESTING SERVICES: Number of District level RI sites providing antenatal testing services	18	22	26	30	35	Provincial Laboratory/ District Provider reporting	Provincial stewardship of laboratory services will be accepted by District Providers and once trained, Providers will practice
		CLINICAL DIAGNOSIS: % of HIV-related mortality with clinical diagnosis	≥ 50%	≥ 60%	≥ 70%	≥ 75%	≥ 80%	Chart review	Improved Laboratory services will be understood and utilized by clinicians for diagnostics and treatment
		LAB MANAGEMENT FELLOWS: Annual number of Lab Management Fellows trained and subsequently employed	≥ 2	≥ 2	≥ 2	≥ 2	≥ 2	Training documentation	Once Laboratory technicians are provided with management skills as well, they will be more desirable to employ and will be utilised
4.5	PLWHA AND VILLAGE HEALTH WORKER PROGRAMS: Programs engaging people living with HIV as expert patients, parent-to-parent counselling, village patient	EXPERT PATIENTS: Number of expert patients counselling HIV patients in RI sites	15	25	35	45	50	Clinic records	Targeted number of HIV patients (as per 4.5 indicator) willing to disclose their status and learn counselling will be available
		VILLAGE HEALTH WORKERS: Number of village level health workers trained and working	15	30	50	70	90	CHAI training records and community-level monitoring	Village-level health worker recruits available, training is successful and health workers continue to be active.

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
	monitoring and livelihood enhancement established							record	
		QUALITY OF LIFE: Quality of Life of RI ART patients	See Output 4.3					See Output 4.3	See Output 4.3
4.6	NEW PRODUCTS: Innovative products and systems developed and utilised to improve rural health services and home based self care	WATER-BORNE DISEASE: Percentage reduction in annual admissions from water-borne illness among those in intervention group	2011: 10% decrease from baseline 2012: 30% decrease from baseline 2013: 50% decrease from baseline 2014: 70% decrease from baseline 2015: < 10% admissions in intervention group					Chart review-baseline vs. current	Improving quality of drinking water and sanitation options at home will impact incidence of diarrheal disease among PLWHA regardless of stage of illness and treatment.
		TECHNOLOGY: Illness previously referred to Provincial Hospital is handled at District level: i.e. diagnosis and/or monitoring / treatment through telemedicine or SMS based intervention	2011: technology selected and assessment done-implementation begins; 2012: implementation- District sites handling previously referred tasks 2013: chosen technology in all RI sites; 2014: another system chosen, assessment done; implementation begun; 2015: System running, District capacity built in another way.					District ART providers monthly reporting	A suitable technological intervention can be selected and implemented in rural PNG, and it can be acceptable to HCWs and patients.
		PRODUCT DEVELOPMENT: Number of products/systems developed	2011: one system identified; 2012: one system in use; one product identified 60%, 2013: one system and one product in use in RI sites; 2014: another system chosen and developed; 2015: 2 systems and a product in use in RI sites					Documentation of product / system	Innovations can be achieved within the scope of Rural Initiative.
5	Component 5: MONITORING, EVALUATION & OPERATIONAL RESEARCH HIV policy, service delivery guidelines and/or practice influenced by dissemination of information about CHAI model	INNOVATIONS: Number of innovations associated with CHAI supported operational research initiated by the end of 2014	2013: 1 innovation 2015: 1 additional innovation					Project reports	Interest from NDOH and partners to consider innovations, capacity and resource available to roll out Innovation sustainable at user level.
5.1	Outputs M&E SYSTEM: Program M&E system implemented	QUANTITATIVE DATA: Percentage of CHAI II's annual program indicators reported on annually	90%					Second six monthly report of each year and Activity Completion Report	CHAI II staff able to obtain information from supported sites.
		QUALITATIVE DATA: Number of stakeholder surveys implemented and reported by 2015	3					Survey Reports	M&E resources available to conduct and report on surveys
		DATA UTILISATION: Number of instances exemplifying use of M&E	3					Second six monthly report of each year	M&E data are collected and used by CHAI II technical and

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
		data to inform CHAI II program planning						and Activity Completion Report	managerial staff
5.2	BEST PRACTICE: Evidence of best practice in delivery of HIV services in CHAI program areas collected and reported to facilitate development of policy, service delivery guidelines and/or practice in PNG	RESEARCH PROJECTS: Three operational research projects focussing on CHAI-related best-practices completed by 2015	2012: 1 st project initiated 2013: 2 nd project initiated 2014: 3 rd project initiated					Project reports	
6.	Component 6 Objective MANAGEMENT AND COORDINATION: CHAI Phase II managed effectively	% of Purpose indicator targets achieved by 2015	-	-	-	-	85%	Indicator database	Assumptions described in components 1-5 hold true or risks that do eventuate are mitigated sufficiently to enable program to achieve its purpose, component objectives and outputs
		% of annual Component Objective indicator targets achieved	70%	70%	70%	70%	70%	Indicator database	
		% of endline Component Objective indicator targets achieved	-	-	-	-	75%	Indicator database	
		% of output indicators achieving annual targets	70%	70%	70%	70%	70%	CHAI indicator database	
6.1	Outputs MANAGEMENT: CHAI Phase II managed efficiently	ACTIVITIES: % of annual work plan activities implemented	70%	70%	70%	70%	70%	Annual Work Plan spreadsheet	External obstacles do not hinder implementation, funds are received as expected, currency fluctuations do not negatively impact program
		BUDGET OVERSPEND: % overspending compared to budget	0%	0%	0%	0%	0%	CHAI financial records and reports	
		BUDGET UNDERSPEND: % annual underspending compared to budget	15%	15%	15%	15%	15%	CHAI financial records and reports	
6.3	COORDINATION: Improved service-delivery pathways established and/or maintained	Patient records	≥ 70%	≥ 75%	≥ 80%	≥ 85%	≥ 90%	Patient records	Stakeholders have capacity and motivation to coordinate and follow-through; appropriate services at other organizations are available
		REFERRALS IN: Annual number of patients accessing CHAI – supported services referred from other programs compared to 2010 baseline	Annual Number of referrals increases from baseline level					Patient records	Partners will support and maintain pathways
		PATHWAYS MAINTAINED: Number of referral pathways initiated in CHAI phase 1 that are consolidated or	To be announced (TBA) based on baseline of CHAI Phase I pathways as of December 31 2010					Patient records	Partners will support and maintain pathways

Ref	Project Description	Performance Indicators	Targets					Means of Verification	Assumptions
			Y1	Y2	Y3	Y4	Y5		
		maintained during CHAI Phase II							
		NEW PATHWAYS: Number of new referral pathways initiated in CHAI phase II	To be announced (TBA) based on gaps identified in CHAI Phase I pathways as of December 31 2010					Patient records	Partners will support and maintain pathways

ANNEX 2: 2011 WORKPLAN

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Component 1	Supply Chain Management and Logistics													
Component 1 Objective	Improved non-clinical capacity within supply chain management to support scale-up of HIV testing, care and treatment													
Output 1.1	FORECASTING, PROCUREMENT & DISTRIBUTION: Improved forecasting, procurement and distribution capacity through improved data integrity and data driven decision making													
1.1.1	Establish and use Logistics Management Information System (LMIS) to quantify demand HIV medications and other commodities	LMIS established	1	x	x	x	x	x	x	x	x	1	County Analyst	NDoH Logistics Unit
1.1.2	Track incoming and outgoing orders in LMIS	Number of incoming and outgoing orders tracked	70% tracked	x	x	x	x	x	x	x	x	70% in 2011; 80% in 2012	County Analyst	NDoH Logistics Unit
1.1.3	Use report-out function in LMIS to determine actual distribution data monthly	Monthly distribution data reports	3				x	x	x	x	x	3 in 2011; 12 in 2012	County Analyst	NDoH Logistics Unit
1.1.4	Log emergency orders in LMIS	Number of emergency orders	100% of orders logged				x	x	x	x	x	100% of orders logged	County Analyst	NDoH Logistics Unit
1.1.5	Log expired drugs	Quantity of expired drugs	60% of drugs logged				x	x	x	x	x	60% in 2011; 80% in 2012	County Analyst	NDoH Logistics Unit
1.1.6	Look for waste-reducing and cost-effective strategies for procurement	Number of waste reduction and cost effective strategies		x	x	x	x	x	x	x	x		County Analyst	NDoH Logistics Unit
Output 1.2	NATIONAL LOGISTICS STRATEGY: Standardised National Logistics Strategy adopted by NDOH to roll out to provinces													
1.2.1	Send request to UNICEF to act as procurement agent for all HIV related commodities including drugs, HIV test kits, syphilis and Hb test kits	Letter of request	1	x								1	County Analyst	NDoH Logistics Unit
1.2.2	Provide technical assistance for establishment of Procurement Committee	Procurement Committee	1	x	x							1	County Analyst	NDoH Logistics Unit
1.2.3	Train regional Logistics Officers	Number of officers trained	2		x	x	x	x	x			4	County Analyst	NDoH Logistics Unit
1.2.4	Write standard operating procedures international tendering and for forecasting, procurement and distribution process	Standard operating procedures	1	x	x	x						1 in 2011; 2 in 2012	County Analyst	NDoH Logistics Unit
1.2.5	Prepare 1 page fact sheets for sites on supply chain process	Number of fact sheets	1	x	x							1	County Analyst	NDoH Logistics Unit
1.2.6	Process map procedures	Procedure map	0			x	x	x	x			1	County Analyst	NDoH Logistics Unit
1.2.7	Redefine TORs Logistics Officer, AMS	Terms of	2			x	x					2	County	NDoH

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
	Clerk	Reference											Analyst	Logistics Unit
1.2.8	Develop reports to share with sites on quarterly basis	Reports	2			x	x	x	x	x	x	2 in 2011; 4 in 2012	County Analyst	NDoH Logistics Unit
1.2.9	Purchase fax machines and telecommunications machines	Fax Machines	4	x	x							4	County Analyst	NDoH Logistics Unit
1.2.10	Recruit 2nd AMS clerk	AMS Clerk	1			x	x					1	County Analyst	NDoH Logistics Unit
1.2.11	Recruit Logistics Officer to second to NDoH	Logistics Officer	1	x	x							1	County Analyst	NDoH Logistics Unit
1.2.12	Develop reports that can be shared with sites about drug ordering processes	Annual report	1			x	x			x	x	2	County Analyst	NDoH Logistics Unit
Component 2	Laboratory Support													
Component 2 Objective	LABORATORY: Increased utilisation of quality HIV testing and monitoring services nationally													
Output 2.1	Expanded and improved Early Infant Diagnosis (EID) of HIV													
2.1.1	Maintain second site for PCR testing in the Highlands (purchase consumables, maintain equipment)	PCR laboratory	1	x	x	x	x	x	x	x	x	1	Lab Advisor	CPHL, Goroka Hospital
2.1.2	Employ staff for PCR testing in both CPHL and the Highlands Laboratory site	PCR Staff Salary	2	x	x	x	x	x	x	x	x	2	Lab Advisor	CPHL, Goroka Hospital
2.1.3	Contract local staff to manage entire EID national program capacity building including further tertiary training	EID Capacity Building Manager	1	x	x	x	x	x	x	x	x	1	Lab Advisor	CPHL, Goroka Hospital
2.1.4	Conduct training in collection of dried blood spots (DBS) for early infant diagnosis (EID) for health care workers in all high prevalence sites and in sites there are ready to treat and follow up infants (clinical training)	Number of HCWs trained in DBS collection for EID	50	x	x	x	x	x	x	x	x	50	Lab Advisor	CPHL, Goroka Hospital
2.1.5	Conduct supervisory visits for sites trained in collection of dried blood spots (DBS) for early infant diagnosis (EID) for health care workers	Number of provincial (clinical sites) visited	9(61)	x	x	x	x	x	x	x	x	8(50)	Lab Advisor	CPHL, EID sites
2.1.6	Establish and maintain system for transporting DBS samples from provincial service provider sites to CPHL or the Highlands PCR laboratory	Number of provinces sending DBS samples for testing	9	x	x	x	x	x	x	x	x	8	Lab Advisor	CPHL, Goroka Hospital
2.1.7	Conduct PCR tests for HIV on DBS samples and report test results to service providers	Number of tests undertaken/year	500	x	x	x	x	x	x	x	x	1000	Lab Advisor	CPHL, Goroka Hospital
2.1.8	Establish and implement PCR-EQAS	Percentage of test	90%	x	x	x	x	x	x	x	x	95%	Lab Advisor	CPHL, Goroka

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners		
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
	blinded re-tests system for both CPHL and Goroka laboratory	accuracy scores													Hospital	
Output 2.2	QA: Robust quality assurance system established and implemented															
2.2.1	Develop NEQAS for HIV serology	Percentage of test accuracy scores	80%	x	x	x	x	x	x	x	x	80%	Lab Advisor	CPHL		
2.2.2	Recruit, train and supervise staff to coordinate Laboratory Quality Assurance Program	Staff recruited	1	x	x	x	x					0	Lab Advisor	CPHL		
2.2.3	Ongoing Supervision and training of staff	Monthly Supervision visits	12	x	x	x	x	x	x	x	x	12	Lab Advisor	CPHL		
2.2.4	Establish lab confirmation algorithm	Algorithm	1		x	x	x						Lab Advisor	CPHL		
2.2.5	Provide support for accreditation and management of laboratories	Accreditation complete	1 lab	x	x	x	x	x	x	x	x	1 lab	Lab Advisor	CPHL		
2.2.6	Assist roll out of rapid test algorithm	Provinces with rapid test sites	3	x	x	x	x	x	x	x	x	6	Lab Advisor	CPHL		
Output 2.3	HIV MONITORING: A system for monitoring HIV+ patients developed and implemented															
2.3.1	Conduct bi-annual refresher training and provide supervision for laboratories with CD4+ BD machines	Number of trainings	2		x		x			x		x	2	Lab Advisor	CPHL	
2.3.2	Strengthen existing lab based CD4 testing (service contracts, engineer training)	Annual Service contracts in place	NA	x					x			Annual Service contract in place	Lab Advisor	CPHL		
2.3.3	Procure equipment for Point of Care CD4 technology	Equipment	5		x					x		x	5	Lab Advisor	CPHL	
2.3.4	Implement Point of Care CD4 tests (training, reagents)	Number of sites POC testing	5	x	x	x	x	x	x	x	x	5	Lab Advisor	CPHL		
2.3.5	HR for Microbiology, Biochemistry and Haematology Coordinator	Number Staff employed	3			x	x	x	x	x	x	Ongoing	Lab Advisor	CPHL		
2.3.6	Enhance provincial lab HIV Microbiology biochemistry, haematology capacity, conduct a lab tools need assessment, training and supervision	Assessments done Trainings conducted	20 labs assessed 2 national trainings 5 labs enhanced			x	x	x	x	x	x	2 national trainings 5 labs enhanced	Lab Advisor	CPHL		
2.3.7	Validate appropriate viral load and Point of care technologies (consumables, equipment maintenance)	Tests validated	2	x	x	x	x					NA	Lab Advisor	CPHL		
2.3.8	Provide viral load testing equipment for both CPHL and Highlands PCR Laboratory	Testing sites with equipment procured	1			x	x			x	x	1	Lab Advisor	CPHL		
2.3.9	Recruit staff and conduct training in viral load testing for	Number of staff recruited and	2	x	x	x	x						Lab Advisor	CPHL		

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners	
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
	laboratory staff at CPHL and Highlands PCR Laboratory	trained													
2.3.10	Provide reagents and consumables for viral load testing	Number reagents / tests provided per year	300		x	x	x	x	x	x	x	500	Lab Advisor	CPHL	
2.3.11	Establish viral load EQA and maintenance of equipment	Number of sites doing EQA and equipment maintenance	1		x	x			x	x		2	Lab Advisor	CPHL	
2.3.12	Support ongoing CD4, serology and EID PCR EQAS (program costs)	Proportion of labs doing EQA	80%	x	x	x	x	x	x	x	x	80%	Lab Advisor	CPHL	
Component 3	PPTCT & PAEDIATRIC ART														
Component 3 Objective	Increased service utilisation of improved and expanded PPTCT and paediatric ART														
Output 3.1	ROLLOUT: Increased number of sites providing PPTCT and paediatric ART services														
3.1.1	Continue to provide PPTCT and paediatric ART services at already established sites at the Port Moresby General Hospital Well Baby Clinic and Goroka Hospital	Services provided	2	x	x	x	x	x	x	x	x	2 in 2011; continued in 2012	Clinical Director PPTCT / PEDS and staff	PMGH, Goroka Hospital	
3.1.2	Identify new health facilities for provision of PPTCT and paediatric ART services in Lae and Mt Hagen	New PPTCT & Paediatric ART sites	2	x	x							2 in 2011; 0 in 2012	Clinical Director PPTCT / PEDS and staff	Angau, Mt Hagen Hospital	
3.1.3	Undertake assessments of new sites to determine readiness for PPTCT and paediatric ART service provision	Number of assessments	1	x	x	x		x	x	x		1 in 2011; 1 in 2012	Clinical Director PPTCT/PEDS and staff	Angau, Mt Hagen Hospital	
3.1.4	Undertake necessary infrastructure improvements (counselling rooms, furniture, storage units) as per Minimum Standards approved by NDOH in the selected sites for provision of quality PPTCT & Paediatric ART services	Number of sites improved	1		x	x	x		x	x	x	1 in 2011; 1 in 2012	Clinical Director PPTCT / PEDS and staff	Angau, Mt Hagen Hospital	
3.1.5	Develop and disseminate standard operating protocols (SOPs) for synergising patient flow in ANC clinic and child health clinics, procedures in labour wards and referral systems to ensure continuum of care and deliver MCH activities as a package including HIV	SOPs	1			x	x	x	x			1 in 2011; continued in 2012	Clinical Director PPTCT / PEDS and staff	Angau, Mt Hagen Hospital	
3.1.6	Recruit, train and deploy new PPTCT and Paediatric ART	Staff recruited	3			x	x				x	x	3 in 2011; 3 in 2012	Clinical Director PPTCT /	Angau, Mt Hagen Hospital

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
	positions for the new PPTCT and paediatric ART service provision sites											2012	PEDS and staff	
3.1.7	In collaboration with other stakeholders, develop and implement a training plan for enhancing technical and operational skills for PPTCT among MCH service providers.	training plan	1	x	x			x	x			1 in 2011; 1 revised plan in 2012	Clinical Director PPTCT / PEDS and staff	stakeholders throughout the country
3.1.8	Develop and implement a supportive mentoring system for continuous skill buildings among health care workers in Port Moresby, Goroka, Mt Hagen and Lae PPTCT & Paediatric ART sites	mentoring plan for 4 sites	1	x	x			x	x			1 in 2011; 1 revised plan in 2012	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka, Angau, Mt Hagen Hospitals
3.1.9	Facilitate regular coordination meetings of MCH, PPTCT and Paediatric ART and adult ART service providers at provincial and national levels	provincial and national meetings	4		x		x		x		x	2 in Hagen and 2 in Lae in 2011; same in 2012 (PMGH and Goroka done inhouse)	Clinical Director PPTCT / PEDS and staff	PMGH, Goroka, Angau, Mt Hagen Hospitals
Output 3.2	IMPROVED PPTCT: Improved quality PPTCT services at high prevalence sites													
3.2.1	Assess quality of PPTCT services in high prevalence sites	Number of assessments	2	x	x			x	x			2 in 2011; continued in 2012	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka Hospital
3.2.2	Offer full complement of PPTCT services including HIV testing, ART prophylaxis and delivery at current and new sites in accordance with SOPs	Facilities providing full complement PPTCT services	2	x	x	x	x	x	x	x	x	2 in 2011; continued in 2012	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka Hospital
3.2.3	Implement case management system to increase retention of women accessing PPTCT & MCH services and reduce loss to follow-up	Facilities offering case management	2	x	x	x	x	x	x	x	x	2 in 2011; continued in 2012	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka Hospital
3.2.4	Assess the risk of domestic violence during the counselling and testing process to women who test HIV+	Assessments of current sites	1		x	x			x	x		1 in 2011 (Goroka); 1 in 2012 (PMGH)	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka Hospital

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners	
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
3.2.5	Provide supportive counselling and other social services to HIV+ women at risk of domestic violence because of HIV status	Services provided	1			x	x			x	x	1 in 2011 (Goroka); 1 in 2012 (PMGH)	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka Hospital	
3.2.6	Develop and implement strategies to increase the participation of male partners of pregnant women in the testing and counselling process (eg couple counselling)	Male partner involvement strategy	1		x	x	x	x	x	x	x	1 in 2011 (Goroka); 1 in 2012 (PMGH)	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka Hospital	
Output 3.3	IMPROVED PAEDIATRICS: Improved quality of clinical care for HIV exposed and infected children in CHAI-supported sites														
3.3.1	Undertake early infant diagnosis (EID) testing for babies born to HIV+ mothers as part of case management	EID facilities established	2	x	x								2 in 2011; continued in 2012	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	CPHL, Goroka Hospital
3.3.2	Provide early infant treatment (EIT) for babies diagnosed with HIV infection	EIT facilities established	2	x	x	x	x	x	x	x	x	2 in 2011; continued in 2012	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka Hospital	
3.3.3	Develop and implement strategies to increase retention of patients and reduce loss to follow-up	Loss to follow up strategies, patient retention strategies	2	x	x	x	x	x	x	x	x	2 in 2011; continued in 2012	Clinical Director PPTCT / PEDS, Clinical Director Rural Programs, and staff	PMGH, Goroka Hospital	
3.3.4	Develop and implement strategies to improve PPTCT and PEDs data collection and information dissemination at all four sites	Quarterly data forms	8	x	x	x	x	x	x	x	x	8 in 2011 (Goroka and PMGH); 8 in 2012 (Goroka and PMGH)	Clinical Director PPTCT / PEDS and staff	PMGH, Goroka Hospital	
3.3.5	Conduct one update meeting with PPTCT and Paediatric ART practitioners from four sites	Update prescriber meeting	1			x	x			x	x	1 in 2011; 1 in 2012	Clinical Director PPTCT / PEDS and staff	4 CHAI sites plus other PPTCT / PEDS sites	
Component 4	RURAL PROGRAMS														
Component 4 Objective	Increased service utilisation of improved system of quality HIV testing, care and treatment in selected rural localities														
Output 4.1	RURAL HEALTH CARE SERVICES: Improved quality Health Care Service (HCS) in selected rural sites														
4.1.1	Operate high quality adult ART clinics in each of the eight	Percentage of adults, adolescents	-	x	x	x	x	x	x	x	x	≥ 90%	Director Rural Programs	Provincial Health Authority	

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
	Districts of EHP.	and children with HIV still alive and known to be on treatment 12 months after initiation of antiretroviral therapy in Rural-Initiative sites												
4.1.2	Offer full complement of PPTCT services including testing, ART and delivery at two EHP District level health facilities	District Facilities providing full complement PPTCT services				x	x	x	x	x	x	2	Director Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities
4.1.3	Offer Basic antenatal testing package at at least one District site in SHP and WHP and all EHP Districts	Number of District sites providing antenatal testing package in WHP and SHP							x	x		10	Director Rural Programs, Clinical Director Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities
4.1.4	Offer paediatric ART monitoring at two EHP District level health facilities with quarterly reviews at Provincial Hospitals	Number of District sites providing paediatric ART in EHP				x	x	x	x	x	x	2	Director Rural Programs, Case Managers	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities
4.1.5	Conduct Health Fairs featuring VCT with Hospital Rural Outreach Team in RI sites	Number of Health Fairs featuring VCT conducted				x	x	x	x	x	x	20 Fairs / at least 1200 people tested	Director Rural Programs, Case Managers	Goroka Hospital, District Health Facilities
4.1.6	Sponsor and/or facilitate IMAI, PPTCT, Paediatric ART and PICT Training, followed by mentorship and supervision of newly trained HCWs by experienced HCWs in RI sites.	Health Care Workers trained and mentored		x	x	x	x	x	x	x	x	Trainings conducted with follow-up supervision	Director Rural Programs, Country Director	NDoH, W.H.O.
4.1.7	Assess infrastructure of selected rural sites providing HIV services for sanitation, water, electricity and general space to meet basic needs of an operational clinic and Upgrade sites to agreed operational standard	Number of sites assessed and upgraded				x	x			x	x	4	Director Rural Programs, Clinical Directors	District Health Facilities
4.1.8	Conduct Staying Negative Couples Counselling Program with HIV- mothers and their partners through the antenatal setting	Number of couples counselled in sexual and reproductive health and infant care				x	x	x	x	x	x	300 couples per annum	Director Rural Programs, Case Managers	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities
4.1.9	Re-training in antenatal testing at District level	Training conducted		x		x	x			x		4	Director Rural Programs, Clinical Director Rural Programs	Goroka and Mt. Hagen Hospitals, District Health Facilities

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners	
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
4.1.10	Support the establishment of IMAI Highlands Regional Training Centre	Centre Established									x	1	Director Rural Programs, Country Director	Goroka Hospital, NDoH W.H.O.	
Output 4.2	LINKAGES: Increased linkages across continuum of care in selected rural sites														
4.2.1	Conduct VCT trainings for HCW staff and select laypeople along the continuum of care	Trainings conducted			x		x			x		x	10	Director Rural Programs, Clinical Director Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities and PACs
4.2.2	Maintain VCT counsellor databases and facilitate utilisation of their skills through Health Fairs and other events	Database Established					x	x	x	x	x	x	1	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities and PACs
4.2.3	Maintain centralized Determine Strip ordering to the widest extent possible within the Rural Initiative Provinces for quality monitoring and follow-up of reactive people	Centralization Established					x	x	x	x	x	x	Centralized reporting and ordering system in place at all sites	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities and PACs
4.2.4	Conduct Case Management meetings and reporting to maintain low level of Lost to follow up between clinical areas of the Hospital such as ANC/Paeds and ANC/Adult	Meetings held			x	x	x	x	x	x	x	x	4	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities
4.2.5	Support select Care Centres in Provincial capitals to assist with boarding patients being discharged or travelling far for review appointments	Care Centeres supported		x	x	x	x	x	x	x	x	x	2	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities and Community Based Organizations
4.2.6	Maintain patient registry, conduct quarterly ART Providers meetings and other review activities to assure effective patient transfers and reduce lost to follow up	ART Providers Meetings held		x	x	x	x	x	x	x	x	x	4	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities
4.2.7	Engage TB programs for better prevention and treatment. Specifically: Implement TB prophylaxis among HIV patients while getting newly diagnosed HIV patients with TB on ART	INH Prophylaxis implemented in select RI sites			x	x	x	x	x	x	x	x	All RI ART Providers implementing TB/HIV guidelines	Director Rural Programs, Clinical Director Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities
Output 4.3	ADHERENCE & RETENTION: Increased adherence and retention for children, adolescents and adult patients in selected rural sites														
4.3.1	Continue to operate Case Management in EHP and SHP; establish Case	Lost to Follow-up rate in adult HIV Patients	-	x	x	x	x	x	x	x	x	x	≤15%	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners	
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
	Management in WHP	in RI sites													Facilities
4.3.2	Decentralize Case Management services effectively to District level sites through mentorship and supervision	Percentage of District RI sites conducting Case Management activities with supervision only	-		x	x	x	x	x	x	x	≥75%	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities	
4.3.3	Revise Nutritional support based on clinical triage; providing up to 60% daily calories for those most in need e.g. AIDS, TB	Percentage of ART patients with BMI increase of >1	-		x	x	x					≥ 80%	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities	
4.3.4	Develop Case Management Training Curriculum	Case Management Training Curriculum developed				x	x	x				1	Director of Rural Programs	Mendi, Mt.Hagen, and Goroka Hospital and District Facilities	
4.3.5	Establish Case Management Nutrition Bank/Unit WHP	Case Management Nutritional support established in WHP			x	x	x					1	Director Rural Programs, Clinical Director Rural Programs	Mt.Hagen Hospital and District Facilities	
4.3.6	Purchase case management vehicles for WHP, Tari and EHP	Vehicles purchased and in use for Case Management		x	x	x						3	Director of Rural Programs		
Output 4.4	PROVINCIAL LABORATORIES: Improved laboratory quality and scope of services in selected Rural Initiative sites														
4.4.1	Establish and/or maintain Provincial stewardship of laboratory service throughout RI Provinces through centralised reporting, supply ordering, results delivery and QA of District lab services including antenatal testing	Sites Visited		x	x	x	x					QA activity in all 8 Districts conducted	Director Rural Programs, Clinical Director Rural Programs	Goroka Hospital, Mt.Hagen Hospital, District Facilities	
4.4.2	Conduct training, mentor and supervise antenatal testing within RI Provinces	Training conducted		x	x	x	x	x	x	x	x	3 Provinces	Director Rural Programs, Clinical Directors	District Facilities	
4.4.3	Assess busiest District level ART sites for expanded laboratory services and implement widened scope of District level laboratory service provision there: e.g. TB smear, malaria slides, Hb, wet mount for STI	Assessments of sites and workplan made for increased lab scope				x	x		x			3	Director Rural Programs, Clinical Directors	District Facilities	
4.4.4	Assess Provincial Hospital capacity for HIV-related diagnostics and microbiology and implement improvements	Assessment conducted		x		x			x			3	Director Rural Programs, Clinical Directors	Mt.Hagen Hospital, Mendi Hospital	
4.4.5	Train 3-5 new Fellows	Fellows			x	x						5	Director	Goroka	

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
	through RI Lab Management Fellows Program	Trained										Fellows per annum	Rural Programs, Case Managers	Hospital, UPNG, CHAI LST
4.4.6	Lab Management Fellows Practicum Rotations	Lab Fellows rotated					x					5 Fellows per annum	Director Rural Programs, Clinical Director Rural Programs	Goroka Hospital, UPNG, CPHL
4.4.7	Upgrade the laboratories in Western Highlands and Southern Highlands Hospitals	Upgrades Complete			x	x						2 Labs Upgraded	Director Rural Programs, Clinical Director Rural Programs	Mt.Hagen Hospital, Mendi Hospital
4.4.8	Recruit EHP and WHP District Laboratory Supervisor (Hospital Contract)	Recruitment Complete			x				x			2	Director Rural Programs	District Facilities
Output 4.5	PLWHA & VILLAGE HEALTH WORKER PROGRAMS: Programs engaging people living with HIV as expert patients, parent-to-parent counsellors, village patient monitoring by trained laypeople including PLWHAs and livelihood enhancement for ART patients established in selected rural sites													
4.5.1	Conduct Expert Patient Trainings	Training conducted			x		x					2	Director Rural Programs, Clinical Director Rural Programs & Case Managers	Goroka Hospital, Mt.Hagen Hospital
4.5.2	Conduct parent-to-parent counselling training	Training conducted			x		x		x	x		4	Director Rural Programs, Clinical Director Rural Programs & Case Managers	Goroka Hospital, Mt.Hagen Hospital
4.5.3	Conduct TB/HAART DOTS (includes village patient monitoring) trainings	Trainings conducted			x		x		x	x		4	Director of Rural Programs, Clinical Director Rural Programs & Case Managers	Goroka Hospital Mt.Hagen Hospital, District Facilities
4.5.4	Continue micro-finance program to provide appropriate entrepreneurial and cooperative loans to people living with and/or affected by HIV	Microcredit Program Continuing		x	x	x	x	x	x	x	x	32 loans	Director of Rural Programs, Case Managers	Goroka Hospital, Mt.Hagen Hospital, District Facilities
4.5.5	Provide financial management training to loan recipients before loans are given out	Financial Training conducted			x		x	x		x		4	Director of Rural Programs, Rural Program Officer	AT Projects
4.5.6	Provide school fees for selected children or adolescents living with or affected by HIV, with priority given to female ART patients	School fees disbursed to schools		x	x	x	x	x	x	x	x	30 students	Director of Rural Programs, Case Managers	Goroka Hospital, Mt.Hagen Hospital, District Facilities

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
4.5.7	In collaboration with PLWHAs, establish Rural Initiative nutrition production project staffed by PLWHAs and produce sourced from PLWHAs	Pilot conducted		x	x	x	x	x	x	x	x	Food Manufactur ed and distributed among patients	Director of Rural Programs	Goroka Hospital, EHP Provincial Government, NDOH, Private sector, Community-Based organizations
4.5.8	Maintain Case Management presence at PLWHA group meetings	Case Manager present at each meeting		x	x	x	x	x	x	x	x	16 Meetings	Director of Rural Programs, Case Managers	Goroka Hospital
Output 4.6	NEW PRODUCTS: Innovative products and systems developed or discovered, and utilised to improve rural health services and home based self-care in selected rural sites													
4.6.1	Safer drinking water solutions provided for those identified most at risk of quality poor drinking water	Number of Patients receiving PuR sachets and training or rain catchments		x	x	x	x	x	x	x	x	200	Director of Rural Programs, Case Managers	Goroka Hospital, Mt.Hagen Hospital, District Facilities
4.6.2	Safer sanitation solutions provided for those identified most at risk from lack of or poor sanitation facilities	Number patients without sanitation provided with pit latrines or similar hygienic solution			x	x	x		x	x	x	50	Director of Rural Programs, Case Managers	AT Projects
4.6.3	One telemedicine or PDA/SM- based decision tree modality is implemented at District level	Decision Tree implemented at selected District sites				x					x	1	Director of Rural Programs	Goroka Hospital, Mt.Hagen Hospital, District Facilities
4.6.6	M-Health Pilot, R&D / equipment / Training	Pilot conducted		x			x	x			x	2	Director of Rural Programs	Goroka Hospital, Mt.Hagen Hospital, District Facilities, CHAI LST
Component 5	OPERATIONAL RESEARCH AND MONITORING & EVALUATION													
Component 5 Objective	HIV policy, service delivery guidelines and/or practice influenced by dissemination of research on lessons from CHAI model													
Output 5.1	PROGRAM MONITORING & EVALUATION: Quality Program Monitoring and Evaluation System implemented and updated													
5.1.1	Recruit M&E Officer (selected in Dec 2010)	No. of positions	1	x								1	M&E Officer	NDOH
5.1.2	Orient M&E Officer to M&E Framework and to key database and research responsibilities	No. of orientations	1	x								1	Country Director	NDOH
5.1.3	Prepare and submit 6-month QAI reports in accordance with AusAID requirements	No. of reports	2		x		x		x		x	4	Country Director, M&E Officer	NDOH
Output 5.2	BEST PRACTICE: Evidence of best practice in delivery of HIV services in CHAI program areas collected and reported to facilitate policy development in PNG													
5.2.1	Work with NDOH M&E Unit to identify and select project areas	Projects Selected		x	x			x	x			5	Country Director, M&E Officer	NDOH, Provincial Hospitals

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners	
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
	suitable for operational research, case study, or program evaluation														
5.2.2	Collaborate with NDOH Develop research designs	Design developed			x				x				Country Director. M&E Officer	NDOH, Provincial Hospitals	
5.2.3	Assemble design and submit to Medical Research Advisory Council for approval	MRAC Approval submitted				x				x		1	Country Director. M&E Officer	NDOH, Provincial Hospitals	
5.2.4	Conduct research/data collection, survey review	Research undertaken				x	x	x	x	x		1	Country Director. M&E Officer, Analyst	NDOH, Provincial Hospitals	
5.2.5	Data Analysis								x	x			M&E Officer, Analyst		
5.2.6	Disseminate research findings to stakeholders in PNG	Abstracts, Presentations, Article					x				x	1			
Component 6	MANAGEMENT & COORDINATION														
Component 6 Objective	CHAI Phase II managed effectively														
Output 6.1	MANAGEMENT: CHAI Phase II managed efficiently														
6.1.1	Procure office equipment and software for project offices	equipment and software procured		x	x	x	x	x	x	x	x			Deputy Country Director	
6.1.2	Convene monthly meetings of Project Administration team	meetings conducted	12	x	x	x	x	x	x	x	x	24	Country Director, Deputy Country Director		
6.1.3	Convene quarterly staff meetings to discuss project implementation issues, policies and procedures.	meetings conducted	4	x	x	x	x	x	x	x	x	8	Country Director, Deputy Country Director		
6.1.4	Meet monthly with OR and M&E staff to ensure program implementation on track, address any issues through management structure	Meetings conducted	10	x	x	x	x	x	x	x	x	20	Country Director, Deputy Country Director, M&E staff		
6.1.5	Develop and implement financial management system	system developed	1	x	x	x	x	x	x	x	x	1	Country Director, Deputy Country Director		
6.1.6	Finance staff complete monthly cash reports and follow-up with HQ to finalize monthly GLs and other financial documents	reports generated	12	x	x	x	x	x	x	x	x	24	Deputy Country Director		
6.1.7	Prepare annual financial reports in accordance with AusAID requirements	No. of reports	1				x				x	2	Country Director, Deputy Country Director		
6.1.8	Develop annual work plan informed by annual review	No. of work plans	1				x				x	2	Country Director, Deputy Country Director		
Output 6.2	COORDINATION: Improved service-delivery pathways established and /or maintained														

Project Ref.	Component Objectives / Outputs / Activities	Project Activity Unit	Year 1 Milestone	Year 1 2011				Year 2 2012				Year 2 Target	Responsibility	Partners
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
6.2.1	Engage patients in active, ongoing discussions on shared mission and coordination	No. Patient meetings	1	x				x			x	3	Director Rural Programs, Clinical Directors	NDOH, Provincial Hospitals
6.2.2	Create or update referral pathways in major program areas in discussion with partners	No. Of referral pathways shared	2		x		x		x		x	4	Director Rural Programs, Clinical Directors	NDOH, Provincial Hospitals
6.2.3	Quarterly communication with partners to discuss successes and challenges, actions and next steps	Quarterly dissemination of CHAI efforts	4	x	x	x	x	x	x	x	x	8	Director Rural Programs, Clinical Directors	NDOH, Provincial Hospitals

ANNEX 3: PROGRAM BUDGET

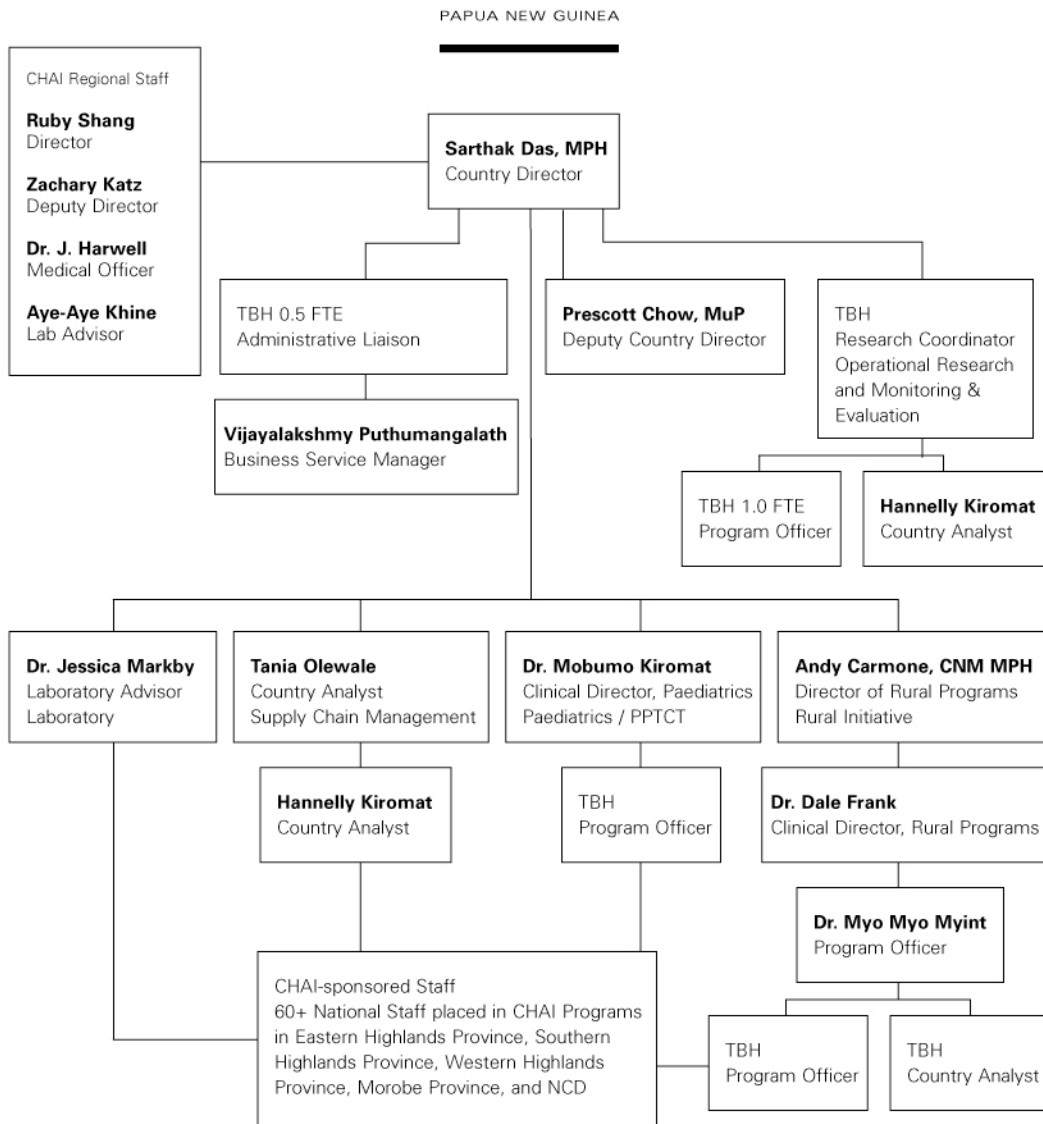
CHAI PNG PHASE II, STAGE 1 BUDGET BY PROGRAM AREAS (average costs per year)

	LAB	CHPAPU	PEDS	RUR	OR	SUP1	Total
CHAI-SOS Insurance	1,479	954	906	2,671	0	0	6,011
CHAI - Health Insurance	13,534	8,008	17,698	30,110	0	721	70,070
CHAI-Salary Employees	144,820	60,060	184,674	281,221	0	10,886	681,660
CHAI-Payroll Tax	6,781	1,567	6,012	11,441	0	871	26,672
CHAI-Retirement	5,086	0	4,509	8,581	0	653	18,829
Subtotal: Salary and Benefits	171,698	70,589	213,799	334,024	0	13,131	803,241
CHAI-Professional	25,200	1,750	0	1,750	0	2,081	30,781
CHAI-Legal and Accounting	1,680	10,290	1,260	4,620	0	1,317	19,167
CHAI-Consulting Expenses	20,521	0	0	19,240	0	0	39,761
Subtotal: Consultants	47,401	12,040	1,260	25,610	0	3,398	89,708
CHAI -Training	124,950	0	132,824	186,900	0	0	444,674
CHAI -Lab & Diagnostic Supplies	343,660	0	33,600	336,000	21,000	0	734,260
CHAI-Care Partner	107,520	29,935	283,800	472,500	19,710	34,205	947,670
CHAI-In-Country Implementation Program Expense	0	0	1,000	0	0	0	1,000
CHAI -Direct Program Support - Other	0	0	58,656	273,000	0	0	331,656
CHAI -Infrastructure	0	0	75,400	420,000	0	0	495,400
Subtotal: Program	576,130	29,935	585,280	1,688,400	40,710	34,205	2,954,660
CHAI-Insurance	0	7,271	0	7,444	0	0	14,715
CHAI-IT Support	0	2,902	0	0	0	0	2,902
CHAI -Office Equipment (Incl. Computers)	3,150	3,150	2,100	15,750	0	2,134	26,284
CHAI -Office Furniture	0	6,756	0	9,460	0	0	16,216
CHAI-Office Supplies	8,500	12,242	4,500	11,999	1,226	0	38,467
CHAI-Dues Subs & Publications	0	546	0	505	0	0	1,051
CHAI-Telecommunications Expense	2,520	19,114	5,544	46,872	0	1,512	75,562
CHAI-Rent/Lease Expense	92,702	26,486	143,275	119,070	22,932	74,667	479,133
CHAI-Buildings Repairs & Maintenance	5,750	1,750	750	11,000	0	213	19,463
CHAI -Security	0	6,316	0	51,000	0	0	57,316
CHAI-Vehicle Repair and Maintenance	0	5,500	0	11,225	0	0	16,725
CHAI-Bank Charges	0	330	0	352	0	0	682
CHAI-Capital Charges	0	0	0	22,880	0	0	22,880
CHAI-Utilities	0	12,750	2,930	4,500	0	0	20,180
CHAI-Printing	0	2,500	0	12,250	0	1,013	15,763
CHAI-Postage/Courier	1,050	610	0	803	0	0	2,463
CHAI - (NON-UNITAID) Clearing, Shipping, Distribution	0	0	0	0	0	3,850	3,850
Subtotal: Office	113,672	108,222	159,099	325,108	24,158	83,389	813,649
CHAI-Staff Airfare/Extended Rail	19,088	5,250	22,175	31,500	2,100	2,100	82,213
CHAI-Staff Lodging	16,380	6,300	17,640	21,420	2,142	3,024	66,906
CHAI-Staff Meals	2,016	2,772	2,268	6,358	630	1,008	15,052
CHAI-Car Service-Taxi-Local Transport-Fuel	273	16,380	0	26,256	0	0	42,909
Subtotal: Office Travel	37,757	30,702	42,083	85,534	4,872	6,132	207,079
TOTAL	946,658	251,488	1,001,521	2,458,677	69,740	140,255	4,868,338
12% Global Allocation							663,864
GRAND TOTAL							5,532,202

CHAI PNG PHASE II BUDGET 2011-2015

MASTER BUDGET	2011	2012	2013	2014	2015
CHAI-Salary Employees	649,336	713,985	785,384	863,922	950,314
CHAI-Payroll Tax	25,402	27,942	30,736	33,809	37,190
CHAI - Health Insurance	70,070	70,070	77,077	84,785	93,263
CHAI-SOS Insurance	5,725	6,297	6,926	7,619	8,381
CHAI-Retirement	17,932	19,725	21,698	23,868	26,255
Subtotal: Salary and Benefits	768,464	838,019	921,821	1,014,003	1,115,403
CHAI-Professional	30,030	31,532	32,108	32,763	33,502
CHAI-Legal and Accounting	22,793	15,540	20,315	22,081	25,935
CHAI-Consulting Expenses	46,000	33,521	34,072	34,976	35,434
Subtotal: Consultants	98,824	80,593	86,495	89,820	94,871
CHAI -Lab & Diagnostic Supplies	758,410	710,110	551,680	488,760	325,840
CHAI-Care Partner	905,183	990,158	927,112	873,600	850,240
CHAI -Direct Program Support - Other	257,700	405,612	490,090	452,072	404,450
CHAI -Training	442,824	446,524	395,920	325,840	327,240
CHAI -Infrastructure	562,800	428,000	386,672	300,000	275,640
CHAI-In-Country Implementation Program Expense	2,000	-			
Subtotal: Program	2,928,917	2,980,403	2,751,474	2,440,272	2,183,410
CHAI-Insurance	14,014	15,415	16,957	18,653	20,518
CHAI-IT Support	3,844	1,959	2,078	2,600	3,326
CHAI -Office Equipment (Incl. Computers)	27,392	25,176	32,108	28,897	26,008
CHAI -Office Furniture	18,018	14,414	11,532	9,225	7,380
CHAI-Office Supplies	43,610	33,323	45,973	50,622	52,403
CHAI-Dues Subs & Publications	1,001	1,101	1,211	1,332	1,665
CHAI-Telecommunications Expense	71,996	79,128	81,553	81,931	82,652
CHAI-Rent/Lease Expense	459,133	499,132	526,622	589,284	618,213
CHAI-Buildings Repairs & Maintenance	17,000	21,926	26,712	29,054	31,665
CHAI -Security	53,634	60,997	40,697	44,766	49,243
CHAI-Vehicle Repair and Maintenance	16,024	17,426	23,069	27,976	31,174
CHAI-Capital Charges	-	45,760	-	45,760	-
CHAI-Utilities	19,219	21,141	23,255	25,581	28,139
CHAI-Bank Charges	671	692	795	834	876
CHAI-Printing	16,000	15,526	19,069	23,976	29,970
CHAI-Postage/Courier	2,402	2,523	2,649	2,781	2,920
CHAI - (NON-UNITAID) Clearing, Shipping, Distribution	4,700	3,000	5,000	5,500	6,000
Subtotal: Office	768,658	858,639	859,278	988,772	992,151
CHAI-Staff Airfare/Extended Rail	76,000	88,425	98,984	115,382	135,220
CHAI-Staff Lodging	61,488	72,324	92,052	101,257	111,383
CHAI-Staff Meals	13,497	16,607	19,379	21,317	23,449
CHAI-Car Service-Taxi-Local Transport-Fuel	40,876	44,942	47,207	51,928	55,521
Subtotal: Office Travel	191,861	222,298	257,622	289,884	325,573
TOTAL CHAI PNG PROGRAM	4,756,724	4,979,952	4,876,690	4,822,751	4,711,408
12% Global Allocation	648,644	679,084	556,485	538,554	525,057
Total Budget	5,405,368	5,659,036	5,433,175	5,361,305	5,236,465
Grand Total Five Year Phase Budget:					27,095,350

ANNEX 4: CHAI PNG ORGANIZATION CHART



ANNEX 5: RISK MATRIX

Component	Specific Risks	Chances	Effect	Risk (C+E)	Impact	Risk Mitigation Measures	Responsibility
Risks Affecting All Components							
All components	Exxon Mobile Liquid Natural Gas (LNG) industry inflates cost of goods, fuel, travel, accommodation and human resources and draws quality staff away from current employment	High	Medium	Medium	CHAI overseas staff accommodation costs increase and PNG health staff may leave to work for LNG. The LNG effect will affect operational costs and human resources, driving up costs of goods, travel, accommodation and fuel and draining human resources from government and non-government health services	Factor increased accommodation cost into Phase II and improve work situation/satisfaction/infrastructure of PNG health staff	Country Director
	Quality of service deteriorating - as numbers on treatment increase, this may affect adherence and resistance and disease burden of facilities coping with treatment failure	Medium	Medium	Medium	The health system (staff, supplies, costs, equipment, client service and follow-up etc) becomes overloaded with the increased disease burden of HIV/AIDS, other STIs and TB	While the setting of the epidemic, the patient load, and social context may be different in other provinces, the design team considers CHAI's 'step-wise, flexible, facility-specific, appropriately paced and tailored approach' undertaken in partnership with hospital and provincial management and staff will serve the program well in its expansion to Western Highlands Province, and of selected components to Southern Highlands Province and Morobe Province. CHAI will ensure full implementation of the Rural Initiative Case Management model and support Aid Post and community and village health workers to ensure high retention and adherence.	Country Director
	Slow pace of Funds release from Health Sector Improvement Program (HSIP) for health sectors activities including CHAI-supported activities	High	Medium	Medium	Slow pace of release of HSIP funds - especially release of funds for implementation to provinces as well as for scale up of the HIV response - slows pace of implementation of health sector activities including those supported by CHAI	Advocacy with NDoH and development partners that contribute into HSIP to streamline the operation of the fund. The new restructure of NDoH will provide additional staff to support HSIP. The NDoH is discussing possibility of Provincial Hospitals or Provincial Health Authorities becoming sub-recipients in Global Fund grants to alleviate problems in fund disbursement.	Country Director
	Financial management capacity - limited capacity to adequately manage and administer funds at provincial level	Medium	Medium	Medium	Funds not transparently used for agreed purposes	Where there are issues of financial irregularities in specific sites, CHAI will identify and use alternative funding pathways that still ensures the program implementation continues	Country Director
	Failure of PNG proposal for funding under GFATM Round 10	Medium	High	Medium	If PNG's proposal for GFATM Round 10 funding fails there will be large funding gap for national roll out of ART including no grant to cover HIV commodities	Provide support and information to authors of Round 10 proposal. NDoH, NACs, donor partners, and a host of other stakeholders are working on a variety of potential emergency and long-term interventions. It is hoped that GoPNG will ultimately bear the responsibility to pay for ART	Country Director
	Staffing - Challenges of Recruitment and Retention in the difficult operating environment of PNG	Medium	Medium	Medium	Under-qualified and/or inexperienced staff recruited due to difficulty of recruiting and retaining well qualified and experienced staff	Provide appropriate balance of leave and work for international staff to address high-turnover risk of international staff and to recruit higher proportion of local staff to address difficulty of recruiting well qualified and experienced staff willing to work in the difficult operating environment of PNG,	Country Director

Component	Specific Risks	Chances	Effect	Risk (C+E)	Impact	Risk Mitigation Measures	Responsibility
						including rural areas	
	Safety and security issues constrain CHAI work in many areas	High	Medium	Medium	Tribal conflict and crime present serious constraints to work in many areas	At the program level, CHAI has developed a security plan and will keep it updated	Country Director
Risks that planned outputs and outcomes in each component are not achieved							
1 Supply Chain Management and Supply	Stockouts at central level	Medium	High	High	Place emergency orders to procurement agent, incur costs, gap in patients' regimens, patients lose faith in care provided by sites, relationship strained between site and central level	Use greater lead time, order larger buffer, control national inventory via site stock levels	Country Analyst
	Stockouts at site level	Medium-High	Medium	Medium	Place emergency orders to central level, gap in patients' regimens, patients lose faith in sites, relationship strained between site and central level, travel to get ARVs from other site	Ship greater buffer stock	
	COS not approved	Medium	Medium	High	No funding after 2010 leading to no financial support for ARV/OI/RUTF/testing kits. Government will have to cover entire cost of program	Participate in stakeholder meetings to address concerns from LFA and GF	
	Increased demand on supply chain cannot be met by current staff levels (numbers and performance)	High	High	High	Sites do not receive adequate commodities to meet patient demand	Training at site-level on inventory management and patient level reporting. Improve QA at central level.	
	Data managers not hired	Medium	High	Medium	Data integrity suffers, increased burden on clinicians, workload increases, less time with patients to perform administrative duties	Increase training on database at site level for clinicians, emphasize indicators on which to concentrate to reduce workload	
	No expansion of warehouse	Medium	Medium	Medium	No room to store drugs, possible damage to inventory, expired drugs because storeroom is less orderly or products have to be stored elsewhere, leakage	Look for other property to use, provide sites with greater stock levels to alleviate burden on central warehouse	
	Cost of shipment not covered by GF under Round 10	Medium-High	Medium	Medium	Government will have to allot funds, alternative grant procured, increases overall budget for program, making it less likely that government will want to take ownership over program	Look for alternate funding from government or other grant or stakeholder	
	Incorrect forecast	High	High	High	Expired goods leading to waste or stock outs leading to interruption of patient regimens	Increase training on forecasting, provide multiple forecasting methods to cross-check figures	
	Procurement takes longer than stated by agreement	Medium	High	High	Patients will not receive regimen, will have to seek alternative and expensive means for acquiring the drug (i.e. tendering through pharmacy, etc)	Form relationship with procurement partner so that risk management process is predetermined	
Poor reporting and recording of routine and emergency orders	High	High	High	Logistics Management Information System has poor data integrity leading to poor forecasting and poor SCM system	Improve recording and reporting mechanism by restructuring reporting format and aggregating data within LMIS		
2 Laboratory Support	Universal access to nationally run EID not achieved through poor facility management	High	Medium	Medium	Poor results	Strengthen supervision and training and EQAS	Laboratory Adviser
	100% of positive infants on treatment not achieved through stockout of ARV/reagents	Medium-High	High	Medium-High	Patient gap	Order larger quantities, have access to emergency funding	
	HR Expansion not achieved as no funding from GoPNG	High	Medium	Medium-High	Positions less accepted, less autonomy	Alternative funding required, partners	
	Staff continuity not achieved through high staff turnover	Medium	Medium	Medium	Loss of skills and quality	Supplementation of salary, overseas training opportunities, rewards	
	Universal Access to Quality Point of Care HIV rapid	High	High	High	Patient gap	Order larger quantities, have	

Component	Specific Risks	Chances	Effect	Risk (C+E)	Impact	Risk Mitigation Measures	Responsibility
	testing not achieved through test kit stockout					access to emergency funding	
	Nationally run Quality Assurance (QA) system for all HIV testing not achieved as QA methods not run	High	High	High	Unreliable test results	Ongoing supervision through strengthening human resources (HR), retraining, External Quality Assurance System (EQAS)	
	New laboratory-based and low-prevalence algorithm not developed through partner disharmony; laboratory accreditation at central and selected provincial labs does not occur through partner disharmony	High	Medium	Medium	Lack of progress on development	Leadership and Advocacy with partners and NDOH	
	Operational research unit not developed at CPHL through disorganisation at CPHL	High	High	High	Poor quality research	Strengthen training of research HR, regular provision of technical assistance (TA), funding	
	Quality Assured CD4 testing available universally not achieved through reagent stockouts	High	Medium	Medium	Patient gap	Order larger quantities, have access to emergency funding	
	Decentralized CD4 testing (Point of Care) not taken up by GoPNG	Medium	Medium	Medium	Limited access to CD4	Advocacy with GoPNG and partners on need for POC	
	District manual testing does not occur through poor facility management	High	Medium	Medium	Poor results	Strengthen supervision and training and EQAS	
	Viral load testing using DBS not available universally through poor quality testing	Medium-High	Medium	Medium	Poor results	Strengthen supervision and training and EQAS	
	Microbiology, hematology, and biochemistry testing not available at all provincial labs as not taken up by facilities	Medium	Medium	Medium	Limited Micro testing	Advocate for need and work with facilities and central NDOH/CPHL	
3 PPTCT and Paediatrics	Provincial Health Authority (PHA) will not support the model and sustainability of these new PPTCT, pediatric ART and clinical care positions	Medium	High	Medium	Program will not be rolled out; PPTCT will fail; more children will be infected; more children will die	Advocate with GoPNG to ensure resources available through recurrent budget and through GF application	Clinical Director PPTCT & Paediatrics
	Plans for new buildings and extensions will not be approved	Low	High	Medium	New coordinated interventions cannot be rolled out; more LTFU issues	Continue to advocate with CEO of hospitals and PHA to ensure the approval proceeds	
	There are not enough resources to implement program	Low	High	Medium	Full program will not be implemented and therefore the full impact will not be reached; lower outputs and targets not met	Explore other funding options; advocate with GoPNG to absorb more HR costs to channel and reprogram more funds to other areas	
	There are not enough trained health care providers to implement these programs	Medium	High	Medium	Full program will not be implemented and therefore the full impact will not be reached; lower outputs and targets not met	Work with GoPNG training coordinator and other partners to ensure training activities continue as planned; advocate to changes in HSIP system to unclog bottlenecks in funding that affect training rollout; conduct trainings directly	
	National guidelines will not be amended	Low	Medium	Low	Old guidelines will be used therefore patients don't have access to best practices	Work with Paediatric Society and NDoH to get approval; work with NDoH to also pilot programs in interim	
	CHAI will not have adequate training and mentor staff	Medium	Medium	Medium	Program rollout will be slower; PPTCT and Paediatric uptake slower; more adverse impacts for patients	Work with partner organizations to fill training gaps; utilize more in-country national experts	
	Training curriculum is not developed or approved	Low	Medium	Low	Program rollout will be slower; PPTCT and Paediatric uptake	Work with partner organizations to fill training gaps; utilize more in-	

Component	Specific Risks	Chances	Effect	Risk (C+E)	Impact	Risk Mitigation Measures	Responsibility
					slower; more adverse impacts for patients	country national experts	
4 Rural Initiative	National stockouts of ARVs and OI drugs at National level	Medium	Medium	Medium-High	Impact on Rural Initiative patients and all PNG HIV patients, and public health in general would be grave, as treatment default would result, leading to viral resistance to first line drugs, leading to new infections with ART resistance virus. Rural Initiative network would fail as trust would be lost	Maintain buffer stock of 3 months in all RI sites, and be ready for emergency procurement as a stop gap measure in between national procurement	Country Director / NDoH / Director of Rural Programs
	National stockouts of Determine HIV Rapid Tests and/or Stat Pak once that second rapid test is rolled out as a confirmatory test	Medium	Medium	Medium	Stock-out of HIV tests dampens the enthusiasm of communities to get tested, as they have to wait long periods of time. This detracts from the ability to take a "test to treat" approach to HIV in the Rural Initiative, and takes months to recover from it	Maintain 4 month buffer stock of test kits and good reporting from all sites on regrading tests done and stock on hand	Director of Rural Programs
	Certain drivers of loss cannot be eliminated through good counseling and removal of material obstacles to care	Medium	Medium	Medium	A high lost to follow-up rate will persist in Rural Initiative patient cohorts due to as yet unknown factors, likely related to cultural issues, including gender factors, or urban settlement lifestyle	Continue to monitor common causes of loss to follow-up and gather information about mitigating the most common drivers of loss	Director of Rural Programs
	National IMAI training program will not be able to fulfil the need created by Rural Initiative for new ART Prescribers, and will not certify a Highlands Regional training team to mitigate that	Medium	Medium	Medium	Without an adequate number of ART Providers, decentralization of care will be prevented	Plan to open ART clinics with IMAI-prepared HEOs. Use an outreach model to maintain decentralization while waiting for another training	Director of Rural Programs / Clinical Director-Rural Programs
5 Operational Research	Lack of interest from NDoH and partners to consider innovations	Low	High	Low	Limited uptake of innovations and best practices learned through operational research; limited impact from the program	Continuous engagement with GoPNG partners to ensure their ongoing support and partnership in program development, implementation, and rollout	Country Director, All staff
	Limited capacity and resource available to roll out innovations	Medium-High	High	High	Limited uptake of innovations and best practices learned through operational research; limited impact from the program	Continuous engagement with GoPNG partners to ensure their ongoing support and partnership in program development, implementation, and rollout; continued dialogue with donors to transition for innovation uptake with GoPNG	Country Director
	Innovations not sustainable at user level	Low	High	Medium	Limited uptake of innovations and best practices learned through operational research; limited impact from the program	Continuous engagement with GoPNG partners to ensure their ongoing support and partnership in program development, implementation, and rollout; continued dialogue with donors to transition for innovation uptake with GoPNG	Country Director
	Lack of capacity of HIV data managers to absorb more data; lack of capacity to utilize the knowledge	Low	Medium	Low	Data not utilized to plan or monitor programs and the country's HIV response; poor decisions made for direction and strategy of the response	Coordination with other partner organizations and GoPNG staff to implement sustainable method to analyse data on ongoing, routine basis	Op Research / M&E staff
	Lack of internal capacity to effectively implement M&E activities	Low	High	Low	M&E activities not fulfilled; program does not have data necessarily to assess program implementation and progress	Immediate hire of M&E team; successful ongoing quality assessment at implementation and other monitoring and evaluation activities to ensure implementation issues addressed quickly	Country Director
6 Effective Management	Indicators of success not achieved in face of risks (described in components 1-5) that occur and are insufficiently mitigated	Medium	High	Medium	Targets not met; impact not reached; beneficiaries not getting full benefit of the program	Successful ongoing quality assessment at implementation and other monitoring and evaluation activities to ensure implementation issues addressed quickly	Op Research / M&E staff; all staff
	Improved service-delivery	Medium	High	Medium	Program does not successfully	Ongoing communication and	All staff

Component	Specific Risks	Chances	Effect	Risk (C+E)	Impact	Risk Mitigation Measures	Responsibility
	pathways not established and/or maintained through lack of stakeholder capacity and motivation to coordinate and follow-through				integrate with other related program areas; patient LTFU rates may increase	interaction with partner organizations; development of MOUs; in-person quarterly meetings	
	Use of outward referral pathways hampered by lack of appropriate services	Medium	High	Medium	Patients do not get appropriate ancillary services	CHAI will work closely with partners to ensure service provision as well as continue to explore other partners to increase referral pathways	All staff
	Referrals inward hampered by partner organization capacity	High	High	Medium	Less referrals in; fewer patients enter program	Ongoing communication and interaction with partner organizations; development of MOUs; in-person quarterly meetings	All staff

Clinton Health Access Initiative (CHAI)

Papua New Guinea Country Program

PO Box 431 Konedobu

NCD, Papua New Guinea

T: +675 301 3751

F: +675 325 7172